

Catalogue104
shortform

Laceys.tvTM



Laceys.tv Cat.104 includes many new products and marks the addition of the Philips SMATV range. Purchased by Fracarro, their catalogues and brand names have merged and the famous French antenna brand Portenseigne is beginning to appear on many Fracarro products. Philips SMATV products are sold and supported exclusively by Laceys.tv for Fracarro.

Digital TV has arrived, delivering picture quality once only dreamed of. The enemy of Digital TV Impulse Noise is necessitating the development of new suppression skills at installer level. Quality distribution equipment and the right instrumentation is proving to be more important than ever and a number of exciting new products and principles appear in this catalogue.

We offer the most comprehensive range of Australian made and imported television reception equipment. Our team is equipped to handle your enquiries. Our technical staff specialise in their own areas of expertise. If we don't know the answer to your question - we will say so. Our Antennas are the choice of the ABC in Melbourne and employed successfully in a number of other Australian TV broadcast environments. Our products are increasingly the choice of technically aware installers for regular TV installation work.

A better product need not cost more, and at Lacey's we work hard to ensure this is the case. Quantity discounts are available to volume purchasers. If this shortform catalogue doesn't describe what you need, and it is for television reception or distribution, we are likely to be able to obtain it for you.

The technical section of this catalogue includes an outline to help in the planning of TV distribution systems. Our professional division designs MATV, CATV, SMATV and Fibre Optic systems both large and small, and provides an advisory service to help solve TV reception problems.

Alternately you can find us on the web @www.laceys.tv

Peter Lacey
Managing
Director.



Super Size me!
Some of our
team with one of
our new Super
Service Vans.

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COVER: a gift from friends Tom & Lyn Guilford.

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BEWARE OF SPECIFICATIONS

Our gain figures often look tame when compared to those quoted by competitors. As radio frequency performance figures can be made under questionable circumstances or even exaggerated, we strongly recommend customers make their own measurements with even the simplest of signal meters.

TERMS OF TRADE:

PRICING & GST: Numbers shown in italics with products are a suggested Retail price in AUD including GST. Trade price is exactly *half*, plus GST. Displaying prices in this way enables the catalogue to be shown to your customer without revealing the cost. Transparency of GST to business means Trade is your effective cost. Trade prices apply to businesses and trades people in TV antenna installation, sales and associated industries. Retail prices are suggestions only, there is no obligation to comply.

PAYMENT: Laceys.tv accept Cash, Cheque, Visa/Bankcard/Mastercard. Strictly 30 day credit account terms are available to approved customers. Account customers may be subject to denial of further credit if amounts remain outstanding beyond 14 days from end of the month following date of invoice, commonly known as 45 days.

OWNERSHIP: Goods remain the property of Peter C. Lacey Services Pty. Ltd. trading as Laceys.tv until paid for in full.

MINIMUMS: No minimum order policy applies.

FREIGHT: Laceys.tv ship countrywide daily with a number of quality delivery services. Express Post is also available.

INSURANCE is the responsibility of the receiver.

DISPUTES OR CLAIMS must be notified within 7 days.

RETURNS are only accepted with Return Authorization Number, a copy of our Invoice, within 14 days of invoice date, and may be subject to a 20% handling charge.

Technical information is offered without liability. Pricing may be subject to change without notice. Errors and omissions excepted. Printed and produced in Australia. Copyright © 2005 Peter C. Lacey Services Pty. Ltd.

Log Periodic Multiband Antennas

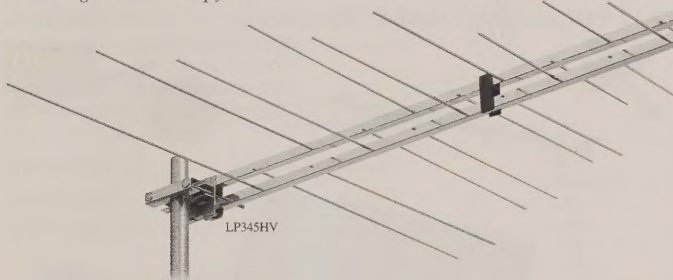
After 10 years of outstanding results in difficult reception areas all over Australia, we are ready for digital!

Fracarro use a balance of precision design and quality materials to produce a superior product, the only one that carries the distinctive FR trade mark and the first true Log Periodic antenna for television.

Mount suits 25 to 60mmØ masting and permits Horizontal or Vertical mounting.

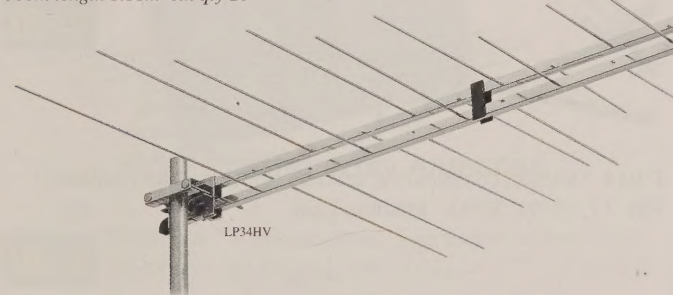
Features include no loss cable connection, snap lock cap that keeps weather out - permanently, secure dual vee block mount, black plastic components for long UV life and concealed cable inside boom.

LP345HV 16 element true log periodic for Australian channels 6-12 & 28-69, natural 75Ω. R63.
boom length 1.11m ctn qty 20



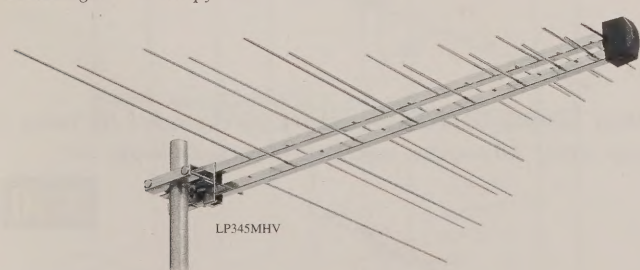
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LP34HV Bands 3 and 4 optimized log periodic! Australian channels 6-12, 28-40, natural 75Ω. Excellent for Capital City Digital TV. R67.
boom length 1.11m ctn qty 20



FRACARRO

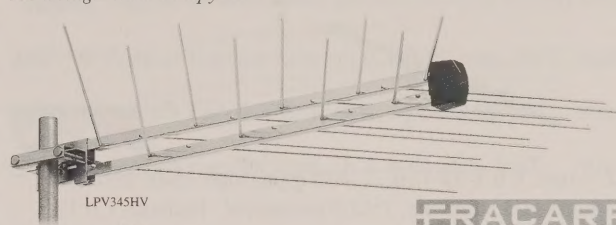
LP345MHV 15 element true log periodic for Australian channels 6-12 & 28-69, natural 75Ω. High performance, small size & low cost. R54.
boom length .72m ctn qty 20



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ANTENNAS LOG PERIODIC

LPV345HV 9 element log periodic for Australian channels 6-12 & 28-69 with modest band 1, natural 75Ω. Popular for caravans and mobile homes! R70.
boom length .71m ctn qty 10



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LP45HV 14 element true log periodic for Australian channels 28-69, natural 75Ω. R58.
boom length .94m ctn qty 10

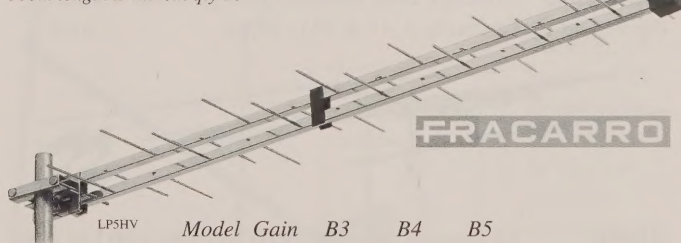


LP45N Improved 15 element true log periodic for Australian ch's 28-69, natural 75Ω. *CAI/AB016 std4 R64.
boom length 1.11m ctn qty 20



FRACARRO

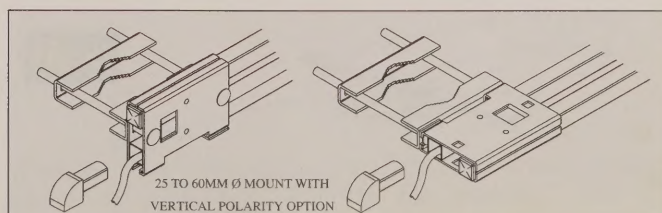
LP5HV 14 element true log periodic for Australian channels 40-69, natural 75Ω. R58.
boom length .94m ctn qty 10



FRACARRO

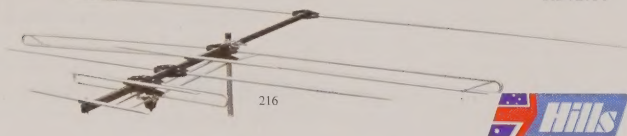
Model	Gain dB	B3	B4	B5
LP345HV	9	9	9	
LP34HV	9	10	~	
LP345MHV	8.5	9	8	
LPV345HV	9	9.5	9.5	
LP45HV	~	10	10	
LP45N	~	11	10	
LP5HV	~	~	~	11

TechTip: strong front to back ratio, flat frequency response across wide frequency ranges and better impedance match make FR Log Periodic antennas an excellent choice for Digital TV.

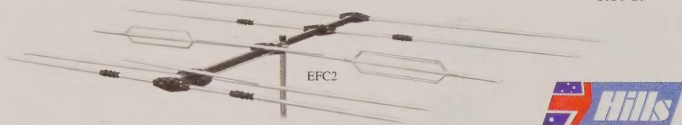


VHF Multiband Antennas

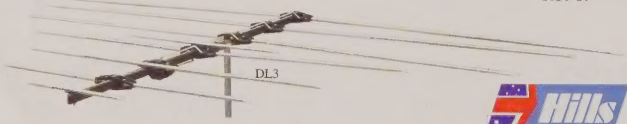
216 Aust. Ch 2-12 VHF, 4-11dB gain, 9-14dB f/b ratio.
9 x 13mmØ HD elements, 300-75Ω balun incl. *Connect @ front!*
R142.80



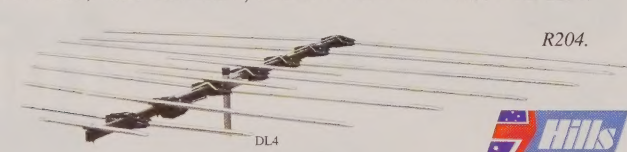
EFC2 Aust. Ch 1-12 VHF, 2-4dB gain, high 18dB f/b ratio.
7 x 13mmØ HD elements, 75Ω F connector. Includes Ch 12.
R198.



DL3 Aust. Ch 0-12 VHF, 4-10dB gain, 11-16dB f/b ratio.
9 x 13mmØ HD elements, 75Ω F connector. Based on TL3.
R198.



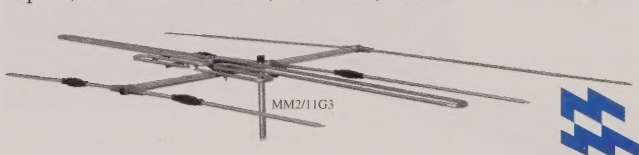
DL4 Aust. Ch 0-12 VHF, 5-11dB gain, 14-17dB f/b ratio.
12 x 13mmØ HD elements, 75Ω F connector. Based on TL4.
R204.



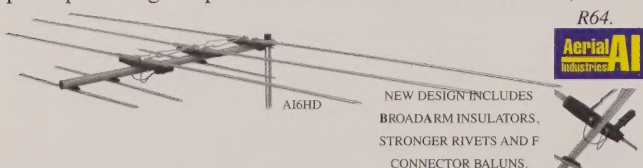
218 Aust. Ch 1 & 8 VHF, 4-8.5dB gain, 8-17dB f/b ratio.
6 x elements incl. 2 x folded dipoles, 300Ω. *Connect @ front!*
R112.90



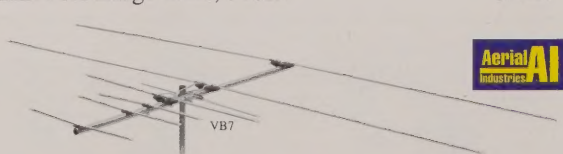
MM2/11G3 3 Heavy Duty elements *plus* patented G section dipole, cut for Channels 2, 11 & FM, 300Ω.
R130.



AI6HD All purpose 6 element VHF antenna with low cost.
Suits fringe area Digital and Analogue. Uses Log Periodic principles for good performance between channels 1-11, 300Ω.
R64.



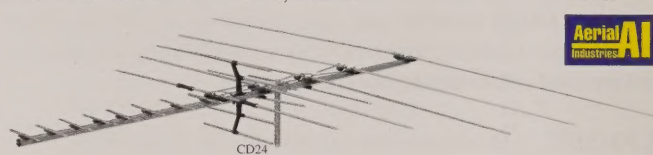
VB7 7 element cut for Australian channels 1 & 11, top VHF performance for fringe areas, 300Ω.
R71.30

**Combination VHF & UHF Antennas**

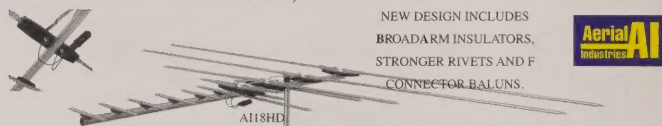
C13 Small combination antenna for channels 2-11 VHF and 28-37 band 4, 300Ω.
R78.



CD24 Medium combination antenna for channels 2-12 VHF and 28-37 band 4, 300Ω.
R118.



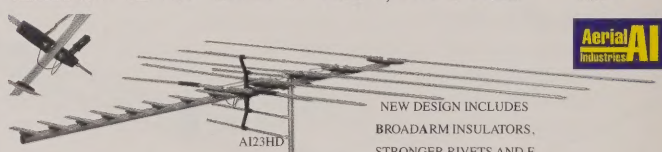
AI18HD Small Heavy Duty combination antenna for channels 2-12 VHF and 28-37 band 4, 75Ω F conn.
R69.1



NEW DESIGN INCLUDES
BROADARM INSULATORS,
STRONGER RIVETS AND F
CONNECTOR BALUNS.

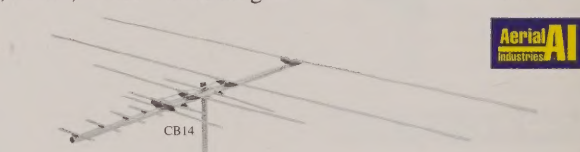
**Retail Packs
coming soon!**

AI23HD Medium Heavy Duty combination antenna for channels 2-12 VHF and 28-37 band 4, 75Ω F conn.
R104.

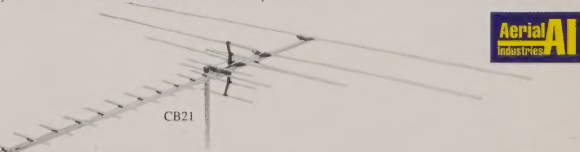


NEW DESIGN INCLUDES
BROADARM INSULATORS,
STRONGER RIVETS AND F
CONNECTOR BALUNS.

CB14 Medium combination antenna for Australian channels 1, FM, 11, 30-39, 300Ω. Medium gain.
R78.



CB21 Large combination antenna for Australian channels 1, FM, 11, 30-39. Corner reflectors, 300Ω.
R104.

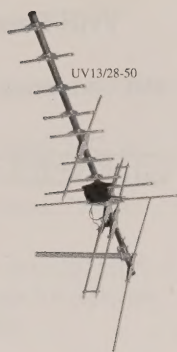


CW15 Medium combination antenna. for channels 2-69, balun ready 300Ω. All rounder, regardless of channels in use. R82.



Vertical and Horizontal Combination Antennas for bands 3, 4 & 5

UV13/28-50 13 element cross polarised combination antenna for channels 6-11 VHF and 28-50 UHF, 75Ω. *R110.*



Vertical and Horizontal Combination Antennas for bands 1, 3, 4 & 5

UV16C 15 element cross polarised combination antenna for channels 1-3 & 6-11 VHF and 28-49 b4, 75Ω. *R130.*



MMSH16 16 element cross polarised combination antenna for channels 1-11 VHF and 28-39 band 4, 75Ω. *R149.16*

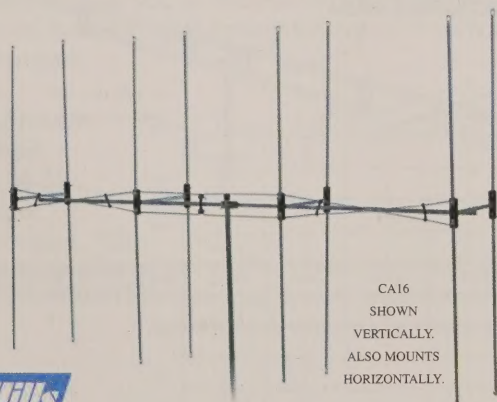
Laceys.tv stock Combination Antennas for almost every purpose imaginable!

VHF Phased Array Antennas

CA8 Channels 6-12, phased array. Extra capture area picks up signal where sometimes yagis fail, 300Ω. *R112.70*

CA16 Channels 6-12, phased array antenna. Twice the CA8's elements for twice the gain, 300Ω. *R195.*

CA16GL Gain Lifter, improve CA8 or CA16 channel 2. *R32.50*



TechTip. outstanding multipath ghost rejection for vertically polarised signals.

VHF Band 1 Yagi Antennas

Strong folded element antennas with integrated 75Ω balun, rugged construction similar to 5FM shown below.

4E2 4 element Yagi for Aust. ch 0, 6.5dB gain, 75Ω. *R222.60*

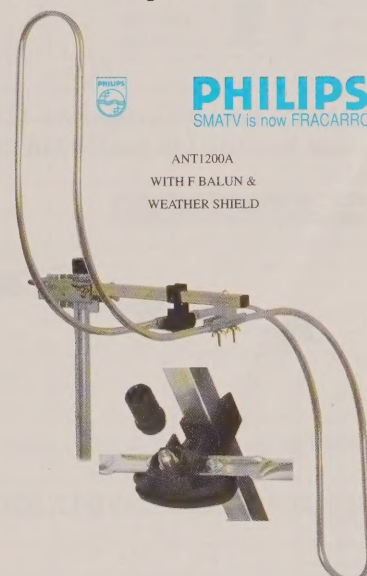
4E3 4 element Yagi for Aust. ch 1, 6.5dB gain, 75Ω. *R153.30*

5B 5 element Yagi for Aust. ch 2, 8dB gain, 75Ω. *R155.40*

Band 2 FM Radio Yagi Antennas

Strong 88-108MHz antennas with integrated 75Ω baluns.

ANT1200A FM Radio dipole, unity gain, F connector. Vertical Horizontal or Circular polarities. *R107.10*



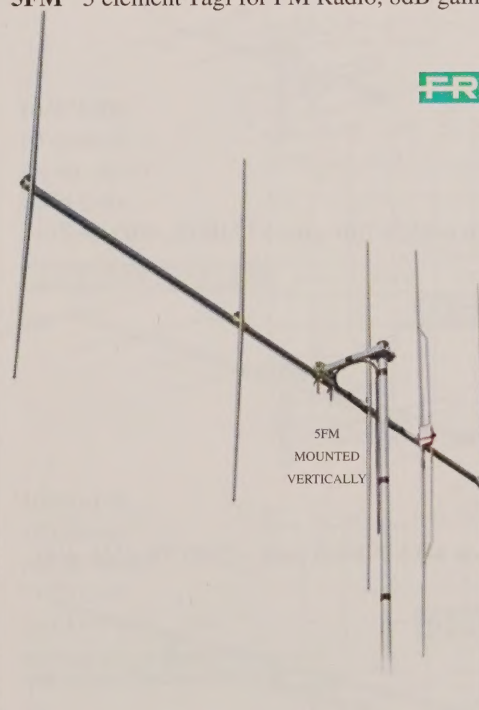
PHILIPS
SMATV is now FRACARRO

ANT1200A
WITH F BALUN &
WEATHER SHIELD

2FM 2 element Yagi for FM Radio, 3.5dB gain, 75Ω. *R86.10*

5FM 5 element Yagi for FM Radio, 8dB gain, 75Ω. *R130.20*

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TechTip: as smaller FM broadcasters often transmit in Vertical polarity, mounting the antenna Vertically can give more consistent and less directional results, significantly lifting weaker stations listening pleasure.

TechTip: unless PV2 or longer stand off bracket is used masting can de-tune vertically polarised VHF Low antennas.

VHF Band 3 Yagi Antennas

All models include frequency optimised baluns. Described by some as a beautiful antenna, BLV features folded elements and fits masting up to 62mmØ.

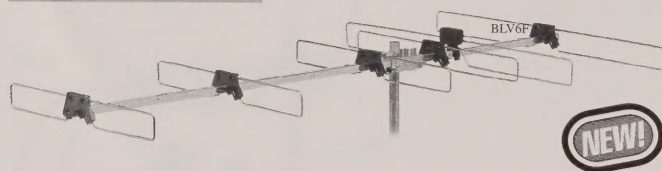
BLV4F 4 element Au **channel 6-12** high gain Yagi now with F connector. 6.5-8dB gain, >14dB f/b, 75Ω. R88.

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BLV6F 6 element Au **channel 6-12** high gain Yagi now with F connector. 7.5-11dB gain, >17dB f/b, 75Ω. R108.

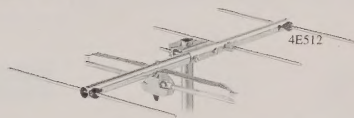
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TechTip: use 2 hands to rotate elements into position.

4E512F 4 element, Au **ch 6-12**, 5dB gain, >14dB f/b, 75Ω. R52.

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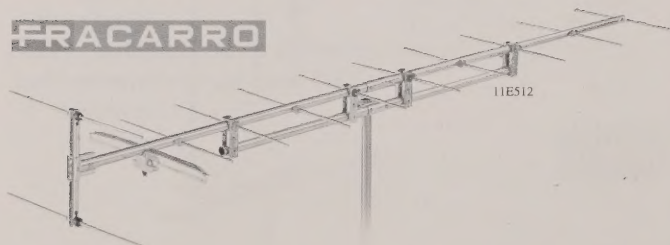
6E512F 6 el., Au **ch 6-12**, 5-7dB gain, >17dB f/b, 75Ω. R68.

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11E512 11 el., Au **ch 6-12**, 7-10dB gain, >25dB f/b. 75Ω. R140.

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14E512 14 el., Au **ch 6-12**, 10dB gain, >17dB f/b. 75Ω. R166.

VHF Band 3 Channel Cut Yagi Antennas

4DF 4 element Au **ch 6**, 6.5dB gain, >18dB f/b, 75Ω. R58.

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NEW!

6D 6 element Au **ch 6**, 9dB gain, >25dB f/b, 75Ω. R75.

6E6 6 element Au **ch 7**, 9dB gain, >25dB f/b, 75Ω. R75.

6E7 6 element Au **ch 8**, 9dB gain, >25dB f/b, 75Ω. R75.

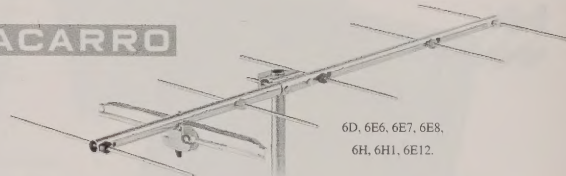
6E8 6 element Au **ch 9**, 9dB gain, >25dB f/b, 75Ω. R72.

6H 6 element Au **ch 10**, 9dB gain, >25dB f/b, 75Ω. R72.

6H1 6 element Au **ch 11**, 9dB gain, >25dB f/b, 75Ω. R72.

6E12 6 element Au **ch 12**, 9dB gain, >25dB f/b, 75Ω. R72.

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11D 11 element Au **ch 6**, 12dB gain, >35dB f/b, 75Ω. R183.

11E6 11 element Au **ch 7**, 12dB gain, >35dB f/b, 75Ω. R180.

11E7 11 element Au **ch 8**, 12dB gain, >35dB f/b, 75Ω. R178.

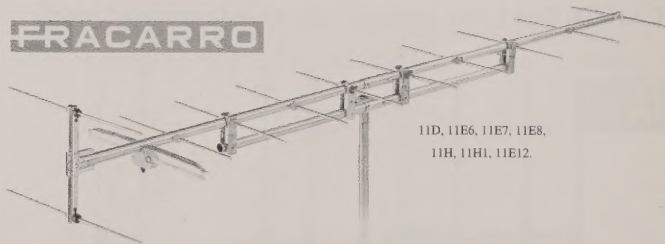
11E8 11 element Au **ch 9**, 12dB gain, >35dB f/b, 75Ω. R176.

11H 11 element Au **ch 10**, 12dB gain, >35dB f/b, 75Ω. R174.

11H1 11 element Au **ch 11**, 12dB gain, >35dB f/b, 75Ω. R174.

11E12 11 element Au **ch 12**, 12dB gain, >35dB f/b, 75Ω. R174.

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TechTip: a Fracarro channel cut antenna provides substantial improvements in gain, front to back ratio and beamwidth, providing results where other antennas fail.

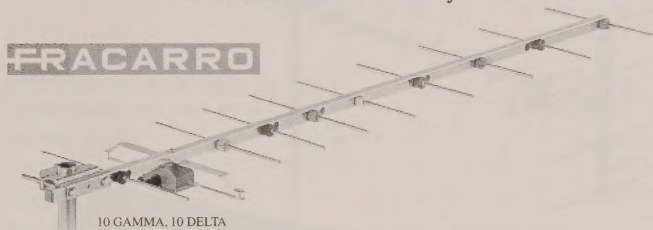
UHF yagi 10 Element Antennas

Low loss P.C.B. baluns included with all Fracarro antennas.

10 GAMMA 10 element Au ch. 20-31, narrow band, 75Ω. R42.

10 DELTA 10 element Au ch. 24-36, narrow band, 75Ω. R42.

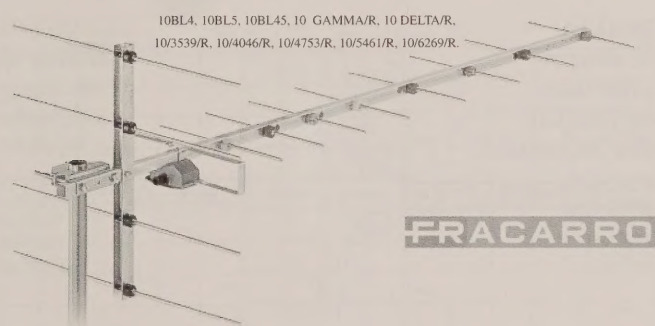
11db gain, 20dB f/b ratio with $\pm 21^\circ$ horizontal and $\pm 26^\circ$ vertical half power angles. Identical to R models except for reflector which reduces the f/b ratio by 4dB.



10BL45 10 el. Au. ch. 28-69, B4&5, +6.5-9.5dB, 75Ω. R46.

10BL4 10 el. Au. ch. 28-40, B4, 8-11dB gain, 75Ω. R46.

10BL5 10 el. Au. ch. 39-69, B5, 8-11dB gain, 75Ω. R46.



TechTip: to assist selecting a better UHF antenna, we reproduce gain vs. frequency and S.W.R. sweeps for narrow band Fracarro UHF antennas. Level shown in 5dB steps from a 0dB reference point 1 line up from the bottom. Gain is the lower trace. The result at each numbered marker is also shown in figures. Amateur radio operators have long understood the extra performance narrow bandwidth antennas offer. Why should the television industry miss out any longer?

The following 10 element antennas are narrow bandwidth models that allow you to choose an antenna with gain where it's needed. $\pm 21^\circ$ horizontal and $\pm 27^\circ$ vertical half power angles.

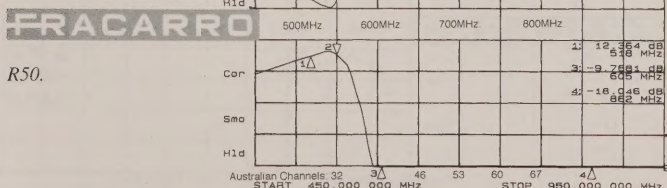
10 GAMMA/R

10 element

Au ch. 20-31

11dB gain

24dB f/b ratio, 75Ω.



R50.

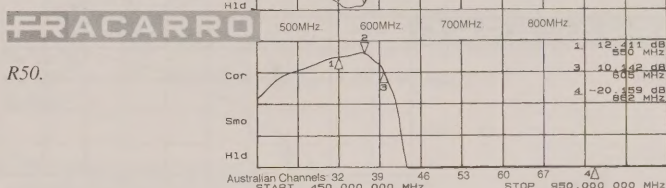
10 DELTA/R

10 element

Au ch. 24-36

11dB Gain

24dB f/b ratio, 75Ω.



R50.

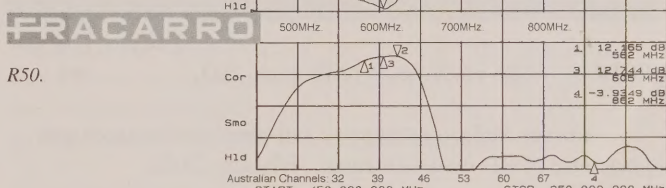
10/3539/R

10 element

Au ch. 28-42

11dB Gain

24dB f/b ratio, 75Ω.



R50.

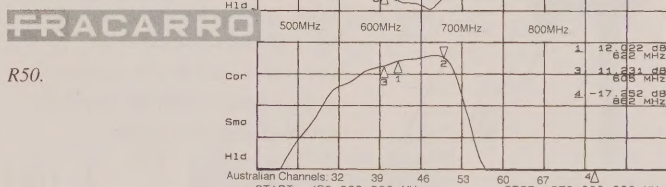
10/4046/R

10 element

Au ch. 34-49

11dB Gain

24dB f/b ratio, 75Ω.



R50.

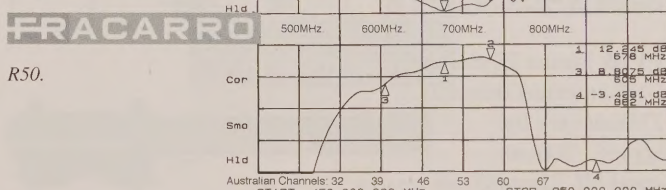
10/4753/R

10 element

Au ch. 40-57

11dB Gain

24dB f/b ratio, 75Ω.



R50.

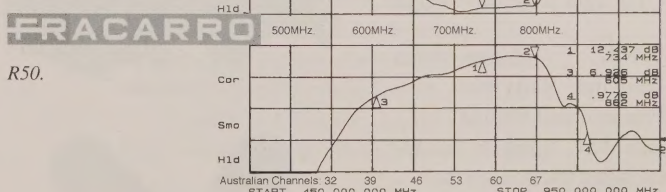
10/5461/R

10 element

Au ch. 46-67

11dB Gain

24dB f/b ratio, 75Ω.



R50.

10/6269/R

10 element

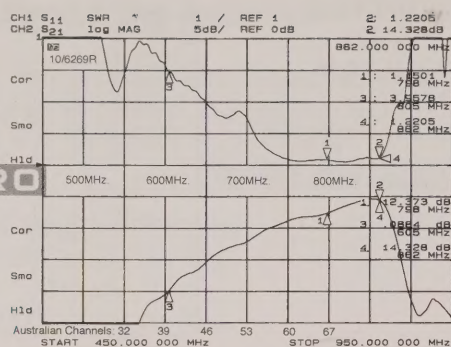
Au ch. 55-75

11dB Gain

24dB f/b ratio, 75Ω.

FRACARRO

R50.



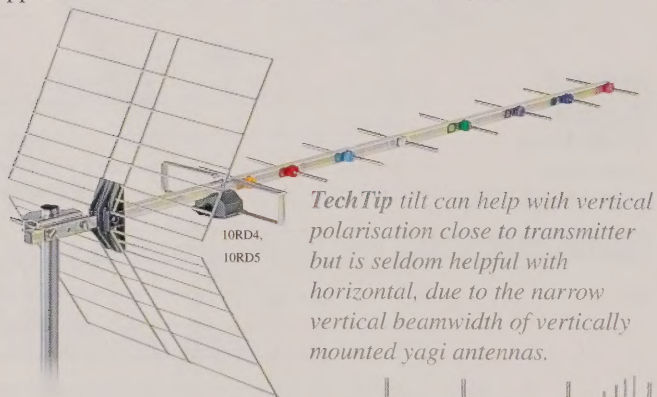
10 element narrow bandwidth Fracarro antennas that allow you to choose an antenna with gain where you need it.

10/860960 Special purpose 860-960MHz 7-9.5dB gain Yagi antenna, similar in appearance to 10 DELTA. R56.

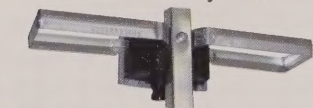
10RD4 B4 ch.28-40, 9-11dB gain, 75Ω. R60.

10RD5 B5 ch.39-69, 9-11dB gain, 75Ω. R60.

Corner Reflectors improve anti-ghost performance and appearance of RD model antennas. F/b ratio 23dB.

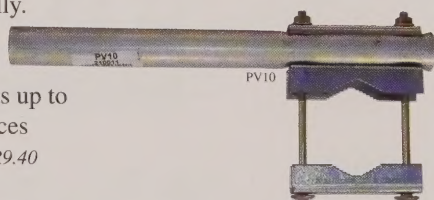


Fracarro 10 element antennas mount horizontally or vertically.

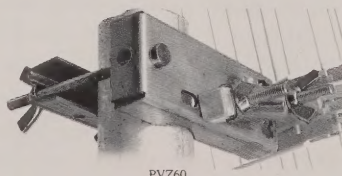
**FRACARRO**

PV10 Mount 20 element FR UHF antennas vertically.

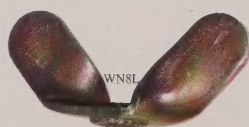
275mm long for approx. 200mm stand off, 25mm Ø, fits up to 62mm Ø mast. Replaces PV1. R9.40



PVZ60 Enables use of masting up to 60mmØ and or tilt of any FR 10 element UHF yagi antenna. R11.60



WN8L Large 60mm wing nut. Suits most Fracarro and Philips antennas. Spins on easily, includes friction surface. R2.40

**FRACARRO****UHF yagi 20 element Antennas**

20BL4 20 el. Au ch. 28-40 B4, +10-13dB, f/b23dB, 75Ω. R66.

20BL5 20 el. Au ch. 39-69 B5, +10-13dB, f/b22dB, 75Ω. R66.

20BL45 20 el. Au ch. 28-69 B4&5, +7-11dB, f/b22dB, 75Ω. R66.



Thundering Performance!

20 Alfa through to 20/6269 are narrow bandwidth antennas with $\pm 12^\circ$ horizontal and $\pm 23^\circ$ vertical half power angles.

20 ALFA

20 element

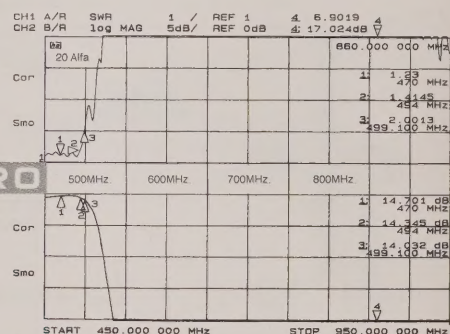
14dB Gain

for UHF CB,

nice 50Ω match!

FRACARRO

R72.

**20 GAMMA**

20 element

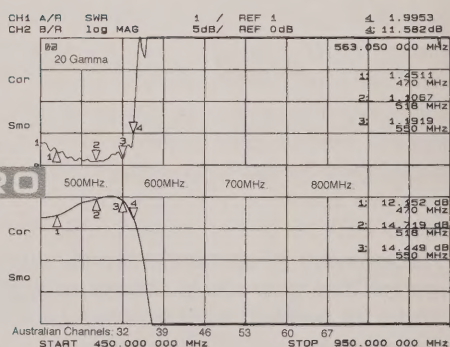
Au ch. 20-31

14dB Gain

26dB f/b ratio, 75Ω.

FRACARRO

R72.

**20 DELTA**

20 element

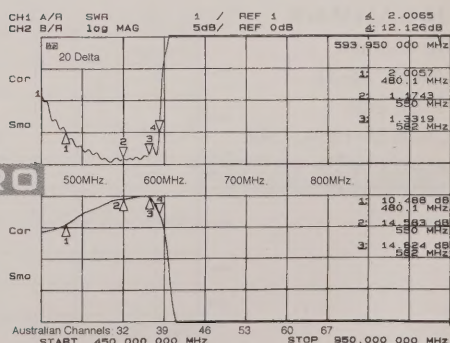
Au ch. 24-36

14dB Gain

26dB f/b ratio, 75Ω.

FRACARRO

R72.

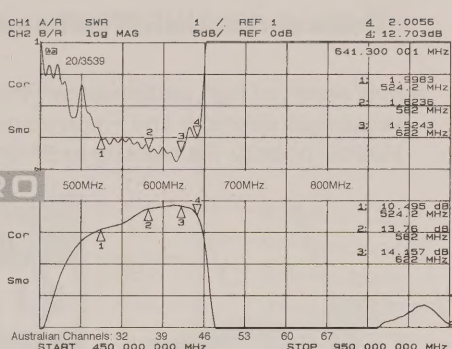


TechTip: CA1 is an option recommended for models 20BL4, 20 Alfa, 20 Gamma, & 20 Delta that improves physical strength.

20/3539
20 element
Au ch. 28-42
14dB Gain
26dB f/b ratio, 75Ω.

FRACARRO

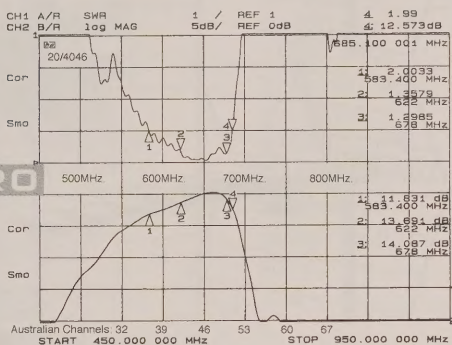
R72.



20/4046
20 element
Au ch. 34-49
14dB Gain
26dB f/b ratio, 75Ω.

FRACARRO

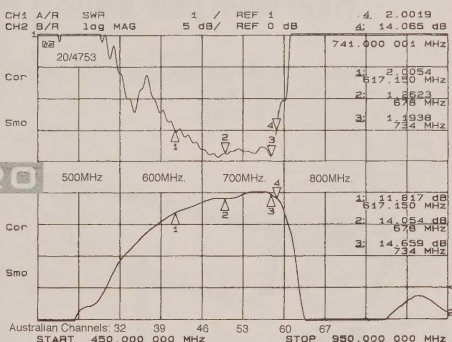
R72.



20/4753
20 element
Au ch. 40-57
14dB Gain
26dB f/b ratio, 75Ω.

FRACARRO

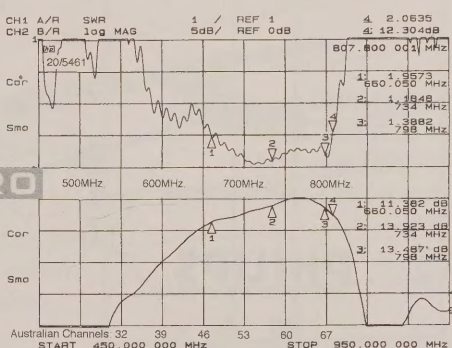
R72.



20/5461
20 element
Au ch. 45-67
14dB Gain
26dB f/b ratio, 75Ω.

FRACARRO

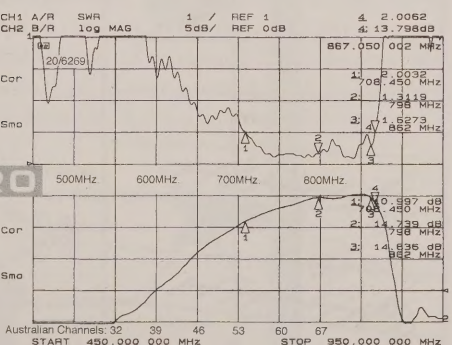
R72.



20/6269
20 element
Au ch. 55-75
14dB Gain
26dB f/b ratio, 75Ω.

FRACARRO

R72.



CA1 Boom Support, improves physical strength of FR 20el. antennas. As shown in 20RD5 picture, above right. R13.

20RD4

ANTENNAS UHF
Au ch.28-40, 10-13dB gain, f/b 25dB, 75Ω. R86.

20RD5

Au ch.39-69, 11-14dB gain, f/b 26dB, 75Ω. R86.

RD models incorporate corner reflectors that improve anti-ghost performance and appearance and include CA1 boom support.

FRACARRO



PACKAGING: Most Fracarro yagi antennas ship in compact knock down cartons that save on shipping costs, van space, and are straightforward to assemble. Cartons about the size of a 36W fluorescent tube contain one UHF antenna.

EXTEND ANTENNA LIFE by treating balun and terminals against environmental attack with a spray on environmental coating. 1/ Dismantle dipole, mask contact points and spray the back side of p.c.b. balun. 2/ Re-assemble once coating is dry. 3/ After cable is fitted, spray the exposed side of p.c.b. including terminals. This coating increases the life of plastic and aluminium in a corrosive environment and even protects aluminium braid coax from atmospheric attack.



Aerial Benchmarking is a British program that specifies minimum performance standards for UHF Digital TV. Conformance is determined by independent Test Houses and covers specifications like Gain, Impedance Match, Directivity and rejection of Feeder Pick-Up. Five Fracarro antennas have passed. The implications are particularly interesting for areas of Australia where mostly UHF is intended for use for Digital TV.
<http://www.cai.org.uk/asp/bmaerials.asp>

High Gain UHF Wideband Antennas

Enhanced dipoles now include F connectors.

BLU220FPLUS

22 el. Au ch. 28-69,
11-18dB gain, f/b 25dB,
75Ω. *CAI/AB017 std3
R98.

BLU420F

42 el. Au ch. 28-69,
10-14dB gain, f/b 26dB,
75Ω. *CAI/AB012 std2
R110.

BLU424F

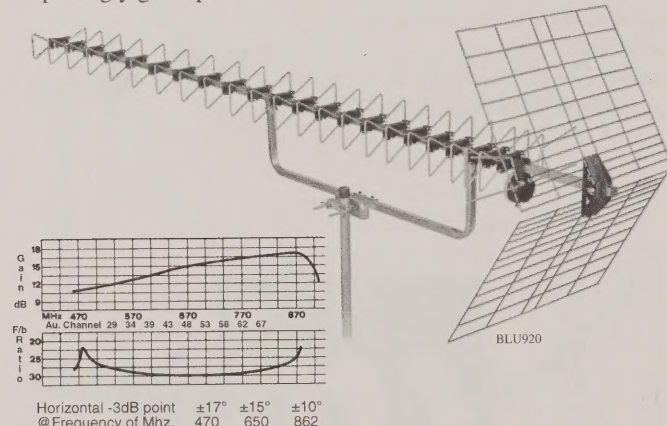
42 el. Au ch. 28-40,
12-14dB gain, f/b 26dB,
75Ω. R110.

BLU425F

42 el. Au ch. 39-69,
13-15dB gain, f/b 26dB,
75Ω. R110.

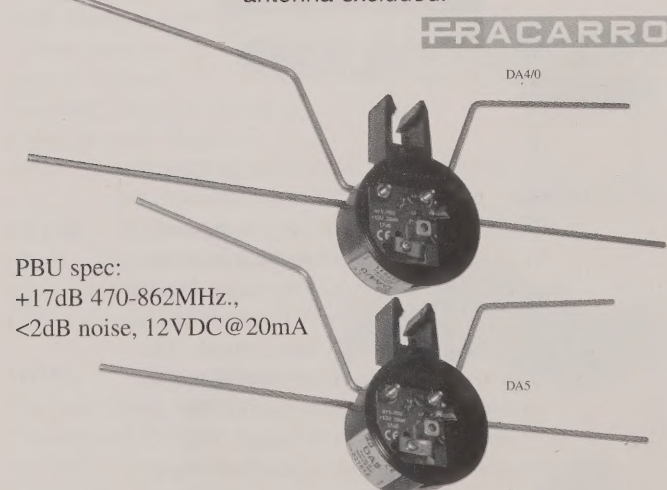
BLU920F

90 element Au ch. 20-73, 11-18dB gain, f/b 27dB, 75Ω. Easy to assemble, large corner reflectors improve ghost rejection. Extra physical strength withstands high wind load. Over 2.4m long, a surprisingly good performer. R198.



Dipole Preamplifiers

Dipole with pre-mounted PBU 12V DC preamplifier, for Fracarro BLU series antennas. Screw on cover from antenna excluded.



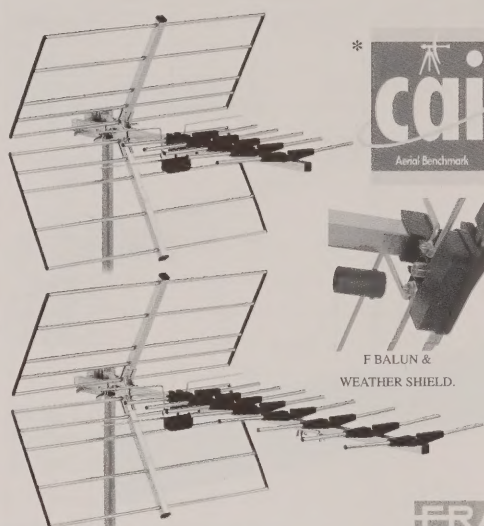
PBU spec:
+17dB 470-862MHz.,
<2dB noise, 12VDC @20mA

DA4/0 Band 4 dipole complete with PBU preamplifier R44.

DA5 Band 5 dipole complete with PBU preamplifier R44.

Delta series UHF Wideband Antennas

A new series of high performance TV antennas with full wavelength directors and F connector. Horizontal or Vertical polarity, fits masting to 60mm, up to 30° tilt.



DELTA500

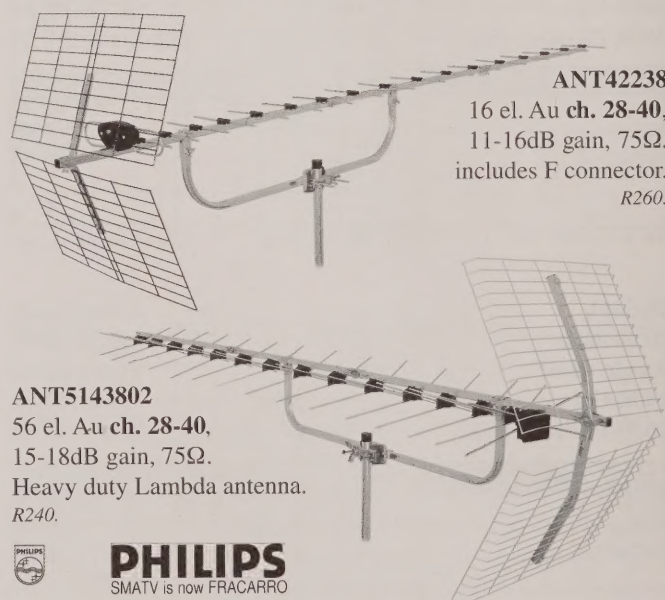
5 directors.
Au ch. 28-69,
8-14dB gain,
f/b 17dB, 75Ω.
*CAI/AB018
std3 R110.

DELTA800

8 directors.
Au ch. 28-69,
10-15dB gain,
f/b 20dB, 75Ω.
*CAI/AB012
std2 R138.

High Gain UHF Band 4 Antennas

Heavy Duty antennas from the Philips stable.



ANT42238

16 el. Au ch. 28-40,
11-16dB gain, 75Ω.
includes F connector.
R260.

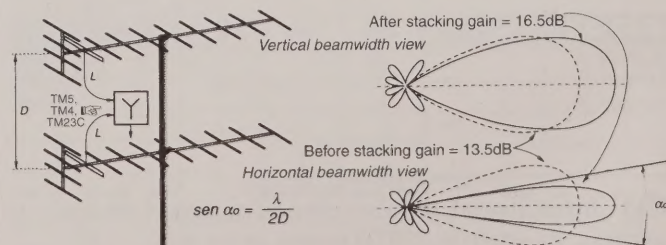
ANT5143802

56 el. Au ch. 28-40,
15-18dB gain, 75Ω.
Heavy duty Lambda antenna.
R240.

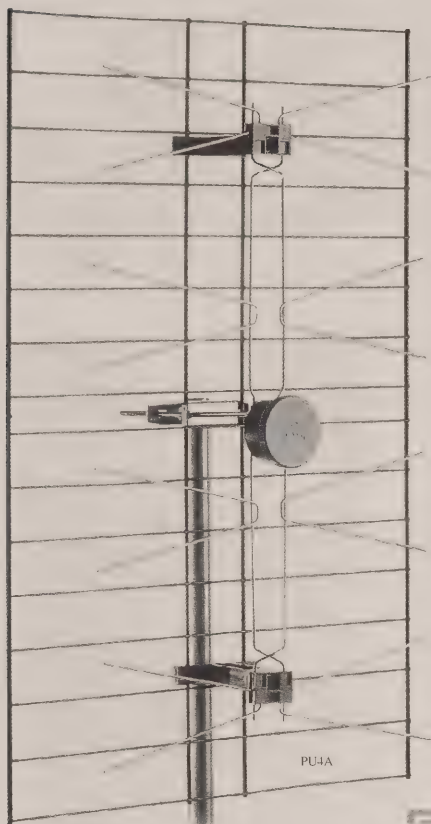


PHILIPS
SMATV is now FRACARRO

TechTip. stacking two identical antennas doubles the signal power, providing an extra 3dB. Four antennas, an extra 6dB. Fracarro stacking couplers (page 23) can be used to stack many different antennas. Stacking also halves beamwidth and sidelobes whilst improving front to back ratio. Space of about 1.5 wavelengths between each 20 element antenna is required.



Phased Array / Flat Panel UHF Antennas



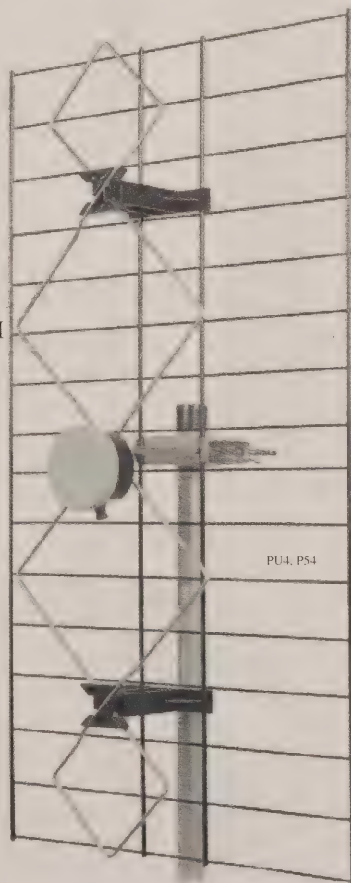
PU4A Ch.28-69. Drags in that little bit more signal in difficult reception areas thanks to larger capture area. 9-14dB gain, f/b >18dB, 75Ω, half power angle @650MHz. $\pm 33.5^\circ \text{H} \pm 20^\circ \text{V}$ DA4/0 DA5 PBU preamplifier option (see p.10). R79.

TechTip. Phased Array antennas provide outstanding rejection of multipath reflected signal when receiving vertically polarised signals (with the antenna mounted vertically).

PU4 Ch.28-69, 75Ω. 9-12dB gain, f/b >22dB, -3dB point @650MHz. $\pm 33.5^\circ \text{H} \pm 20^\circ \text{V}$, PBU preamp. option (See p. 41) R62.

P54 Ch.39-69, as PU4 with better B5 antighost. 9-12dB gain, f/b >24dB, -3dB point @650MHz. $\pm 35^\circ \text{H} \pm 20^\circ \text{V}$ PBU preamp. option (p.10) fits in terminal box. R62.

PVP Vertical polarisation bracket permits vertical polarity installation of PU4, P54, and PU4A. R6.



PU4, P54



PVP

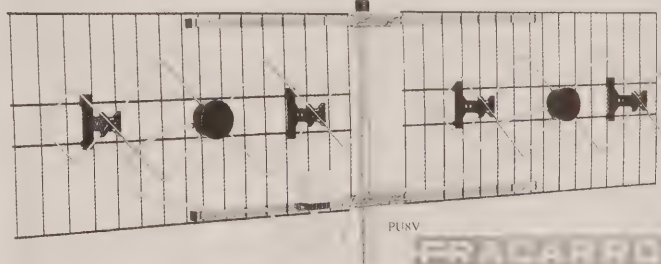
ANTENNAS UHF

PU8H Dual PU4 Horizontal polarity, pre-assembled with stacking bars and coupler. R179.



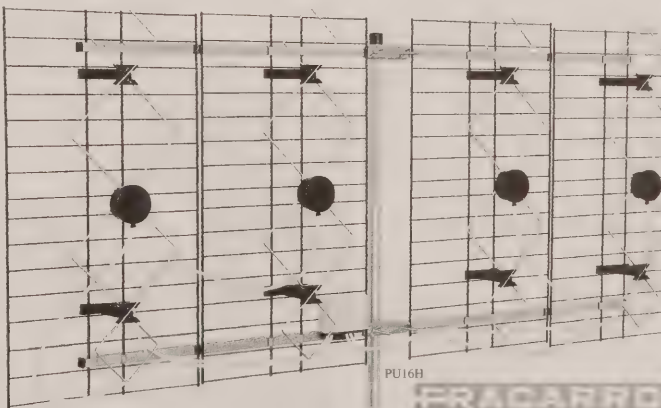
PU8H

PU8V Dual PU4 Vertical polarity, pre-assembled with stacking bars and coupler. R179.



PU8V

PU16H Quad PU4 Horizontal polarity, pre-assembled with stacking bars and coupler. Optimum capture area for diffused signal. R298.



PU16H

PU8H, PU8V AND PU16 ARE PRE-ASSEMBLED WITH WHITE COAX CABLE!

TechTip. PU8 and PU16 can help with terminally weak or diffused signal. As well as larger capture area they give extra gain, narrower beamwidth and higher front to back ratio than a single phased array antenna. Mount PU16 securely as antenna movement of narrow beamwidth can cause signal fade.

Compatible with DA4/0 DA5 PBU preamplifiers.

ANTENNAS UHF

AP369 Ch. 28-69, directors sharpen up beamwidth and increase gain. New mounting bracket suits masting from 20 to 60mmØ, and simplifies use with vertical polarity. Optional BR105 or BR103 preamplifier fits inside balun (see page 41). Up to 13.5dB gain with 20dB front to back ratio. *R124.*



Phaselink

Low cost antennas for UHF and VHF, available with amplifiers and duplexers. Priced individually, ships in knock down trade packs of 5.



PL10	Bands 4 & 5, the original Phaselink.	<i>R46.</i>
PL10D	PL10 with integrated VHF diplexer.	<i>R58.</i>
PL30	PL10 w. 20dB amp, supply & VHF dipl.	<i>R116.</i>
PL30D	PL10 w. 20dB amp, supply & VHF dipl.	<i>R149.</i>
PL10 6-12	B3,4&5 H and/or V polarities w. diplexer.	<i>R149.</i>
PL30 6-12	PL10 6-12 w. 20dB amp, supply, H and/or V.	<i>R224.</i>
PL10 1-12	B1,3,4&5 with H and/or V polarity mix.	<i>R164.</i>
PL30 1-12	PL10 1-12 w. amp, supply, H and/or V mix.	<i>R232.</i>

Antenna Rotator

Useful for FM Radio, Amateur TV, DX TV and UHF CB.

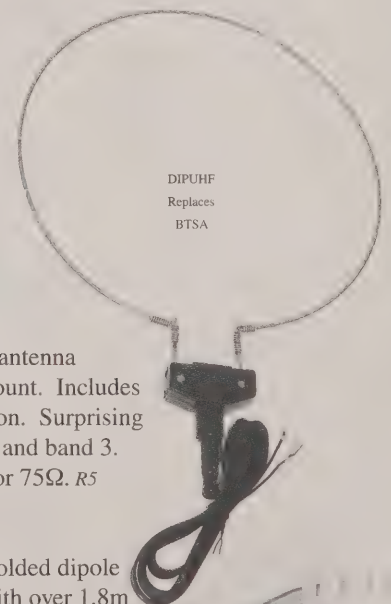
AR300XL Antenna rotator complete with controller. 360° (+5°) rotation in 70 seconds with mechanical stop. Suits masting 25 to 44mm Ø. Up to 45kg vertical load, 4.6kg antenna weight. Requires 3 wires between controller and rotator (excluded). 18V AC secondary, mains powered 68watts. *R298.*

Set Top Antennas

TVTA Indoor telescopic antenna. Retail ready blister pack with colour card, dummy-proof instructions and Bar Code. Each element extends to 750mm. 900mm of 75Ω coax and PAL plug. Stable weighted base! Black or White. *R16.*



SBSA Set Top telescopic antenna. Clips into TV back bracket. 980mm max. element length. Complete with 750mm ribbon. Requires BT1 balun for 75Ω connection. Blister packed, instructions and Bar Code incl. *R16.*



DIPUHF Dipole antenna 190mmØ with TV mount. Includes 750mm of 300Ω ribbon. Surprising performance on UHF and band 3. BT1 balun required for 75Ω. *R5*

RIB-DIP 300Ω folded dipole antenna 1.5m wide with over 1.8m of feeder terminated with spade lugs. Intended for FM radio, the longwire TV antenna. *R4.2*



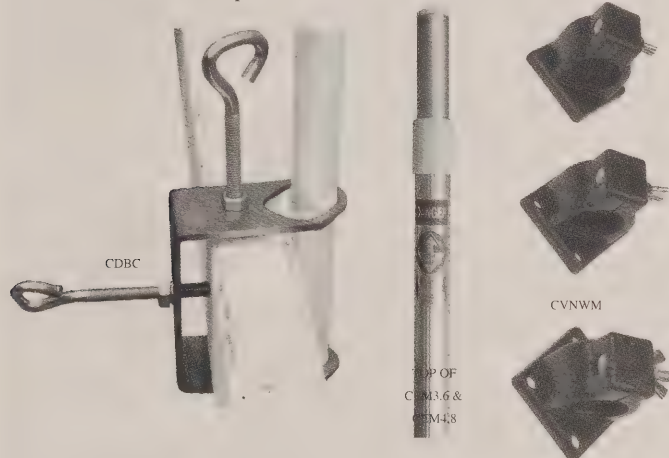
Antenna Rotator**Caravan Antenna Mounts**

CDBC Permits fix of mast to drawbar as per picture, the strongest structure in a caravan. *R25.*

CEM 3.6 32mmØ mast with 28mmØ twist lock telescoping section, 1.8m extends to 3.6m, Aluminium. *R52.*

CEM 4.8 32mmØ mast with 28mmØ twist lock telescoping section, 2.4m extends to 4.8m, Aluminium. *R68.*

CVNWM Set of 3 wall clamps for 25mm Ø masting. Suits M2425 etc. Includes 8G 20mm self tapping screws. Secure soft wall antenna mount, spreads load over a wider area. *R35.*

**MOUNTING HARDWARE****Simple Wall Mount**

RAWM 150 x 95mm (25 x 5mm bar) simple wall mount complete with U bolt and nuts for up to 47mm (2&1/4") Ø masting, 3 x 9mmØ mounting holes 55mm centre to centre, and 3 x masonry fixings for 8mm drill and 40mm long screws. Passivated zinc finish. 2 required for most applications. *R17.8*

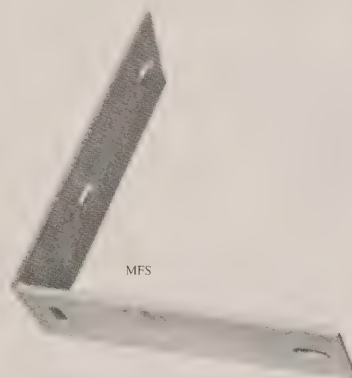
**MOUNTING HARDWARE****Curved Fascia Brackets**

CFB1212	1.2m x 1.2mm wall & 5mm plate	<i>R15.8</i>
CFB1512	1.5m x 1.2mm wall & 5mm plate	<i>R19.3</i>
CFB1812	1.8m x 1.2mm wall & 5mm plate	<i>R21.5</i>
CFB1816	1.8m x 1.6mm wall & 5mm plate	<i>R26.1</i>
CFB2716	2.7m x 1.6mm wall & 5mm plate	<i>R43.</i>

PM1816 Pole Mount 1.8m x 1.6mm wall as CFB with mtg plate at 90° to CFB or vertical. *R28.*

All 25mm Ø pipe, hot dip galvanised for long life.

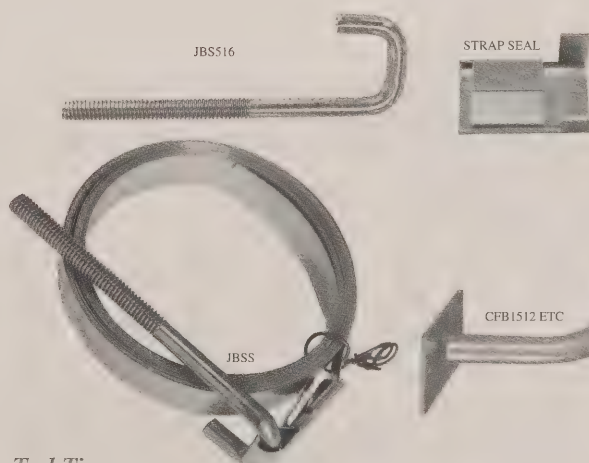
TechTip. Prevent Fascia Board Sag by securing one side of fascia bracket with a 65mm long coach screw through the fascia board into a rafter, and 40mm long coach screws into the other holes.



MFS Metal Fascia Support, Hot Dip galvanised. Secures fascia bracket to metal fascia. Cup Square Bolts 3/8" x2" x2, nuts & washers and 2 x coach screws to fix return to rafter not included. *R19.5*

Chimney Bracket Kits & Components

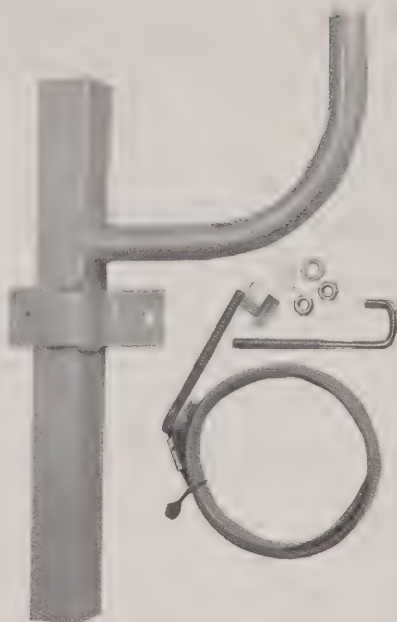
JBS516	J Bolt Square 100 x 25mm x 5/16"	<i>R1.4</i>
JBSS	J Bolt Strap & Seal Assembly	<i>R13.6</i>
CS1918	Coiled strap only, 19mm x 18m	<i>R32.9</i>
STRAP SEAL	Locks chimney strap	<i>R1.</i>



TechTip. a practical way to extend the UV life of any weather exposed plastic is to paint it. A light coat from a spray can of any colour can help, and a clear Circuit Board Lacquer coating can have a suprisingly positive effect. Test compatability of paint and plastic before use!

CCBKIT Curved Chimney Bracket Kit, 1.8m. Low cost complete chimney mount, with strap presealed to 5/16" J bolt, separate J bolt, strap seal, nuts & washers are provided.

R45.3

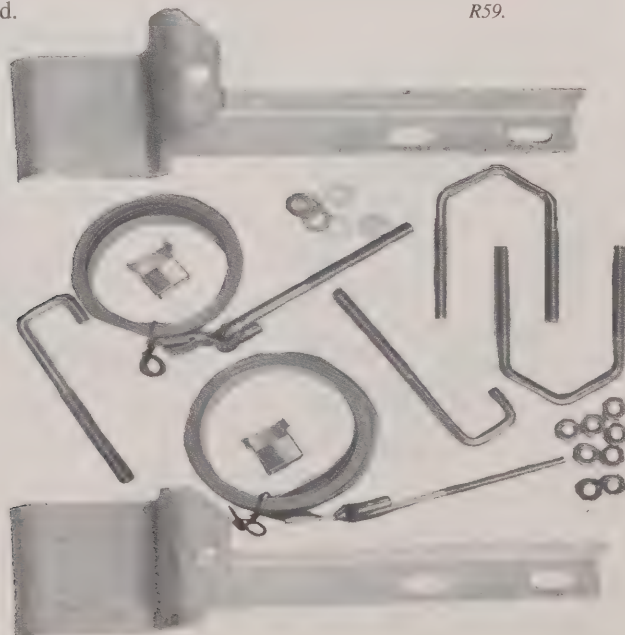


CBK12 Hot Dip Galvanized bracket, 320mm between U bolts. Complete with strap, one end pre-sealed to a 5/16" J bolt. Another J bolt, strap seal, 5/16" U bolts, nuts & washers included. Supports 2 big antennas on mast up to 2.4m.

R37.5

CBK6 Two individual brackets, each with their own strap, one end pre-sealed to a 5/16" J bolt. Additional J bolts, strap seals, 5/16" U bolts, nuts & washers are provided. Allows brackets to be fitted as far apart as practical to better spread the load.

R59.



Masting Galvanised

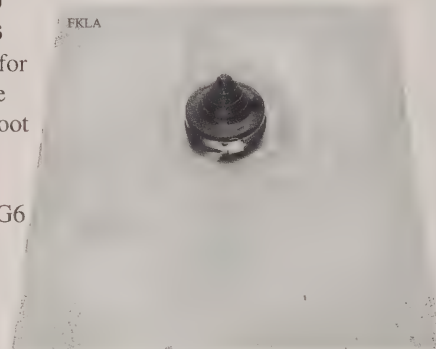
M1825	1.8m x 25mmØ (6'x1")	R12.2
M1832	1.8m x 32mmØ (6'x1&1/4")	R16.4
M2425	2.4m x 25mmØ (8'x1")	R18.5
M2432	2.4m x 32mmØ (8'x1&1/4")	R21.5
M3032	3.0m x 32mmØ (10'x1&1/4")	R28.
M3632	3.6m x 32mmØ (12'x1&1/4")	R32.6
M4532	4.5m x 32mmØ (15'x1&1/4")	R43.
M4538	4.5m x 38mmØ (15'x1&1/2")	R52.5
M67476	6.7m x 47.6mmØ (22'x1&7/8")	R108.
M7332	7.3m x 32mmØ (24'x1&1/4")	R65.1
TM20	6m (20') 2 piece telescopic mast	R113.
TM30	9m (30') 3 piece telescopic mast	R179.
TM40	12m (40') 4 piece telescopic mast	R251.
TM50	15m (50') 5 piece telescopic mast	R315.6

Don't forget **TMA20, TMA30, TMA40, or TMA50** telomast accessory pack required for each telomast.

Flashing Products

FKLA Designed for antennas, lead tile 410x490mm & boot for masting to 50mmØ includes cable entry for RG6 or RG59. Carefully fitted, replaces a tile.

R46.

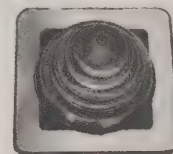


FKZ Zinc tile 460 x 520mm with vulcanised EPDM boot for masting 25 to 100mm Ø. An environmentally friendly solution, secure FKZ with silicone.

R52.

AQUASEAL1 EPDM flash for up to 63mm Ø masting on a steel or tile roof. Shapes easily to roof profile for good weather seal with silicone.

R16.6



SILPRG Silicone, plumbers roof & gutter, translucent, non acetic cure, Fosroc 300g (300ml).

R11.6



Special Mounts

ME900	.9m mast extension, galvanised	R17.
ME1200	1.2m mast extension, galvanised	R18.16
ME1500	1.5m mast extension, galvanised.	R21.5
ME1800	1.8m mast extension, galvanised.	R26.

MEKIT Mast Extension Kit. 2 x long 140mm U bolts with 6 vee blocks, nuts & washers. Allows masting to be fitted side by side for extra height.

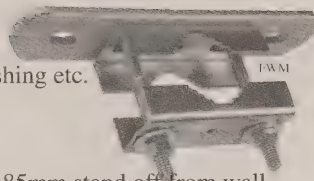
R17.



FWM Flat Wall Mount.

Two will fix masting to wall with less than 5mm overhang from flashing etc. Complete with 2 x vee blocks.

R12.5



DCB D Clamp Bracket. 185mm stand off from wall, 393mm between 10mmØ mounting positions with options 30mm either side. H.D. Galvanised, U bolt & nuts incl.

R45.1



RM1816 Rafter Mount 1.8m (6') x 25mm Ø mast. Bolts to rafter, etc. Use FKLA or Aquaseal to weatherproof.

R29.

RM2716 Rafter Mount 2.7m (9') x 25mm Ø. Bolts to rafter, etc. Stay bar or guy wire support required.

R43.

UEM2 Under Eave Mount 2m x 25mm Ø mast for metal fascias etc. Option that does not interfere with roof surface.

R39.

Mast Feet

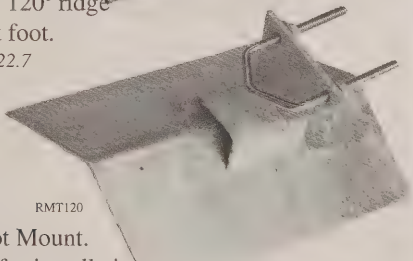
RMI Ridge Mount Iron. Iron roof ridge cap mast foot.

R19.9



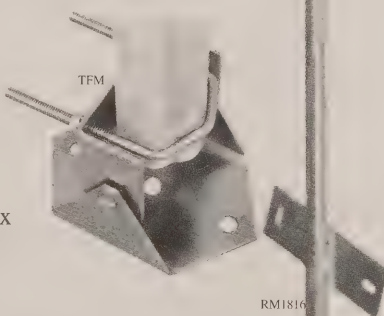
RMT120 Ridge Mount Tile. Tile roof 120° ridge cap mast foot.

R22.7



TFM Telo Foot Mount. Swivels for installation to almost any flat surface regardless of angle. 12mm fixing holes 100mm apart.

R24.2



LARM Light Angle Roof Mount 27 x 9cm. Fix to rafter with coach screws etc. 12mm fixing holes 115 & 200mm apart.

R18.5



RM1816

UEM2

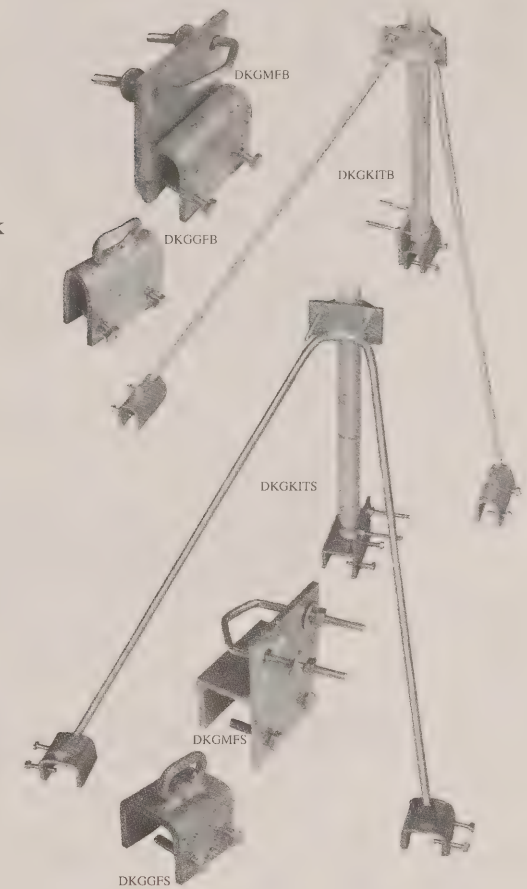
Cliplock Decking Brackets

DKG KIT B Decking Kit Brownbuilt. Fits steel deck roofing with Narrow ribs.

R48.3

DKG KIT S Decking Kit Stramit. Fits steel deck roofing with Wide ribs.

R48.3



DKG MF B Decking Mast Foot Brownbuilt.

R17.8

DKG MF S Decking Mast Foot Stramit.

R17.8

DKG GF B Decking Guy Foot Brownbuilt.

R14.

DKG GF S Decking Guy Foot Stramit.

R14.

Tripod Roof Mounts

TRM IRON

Iron Roof Tripod Mount for freestanding fitting of lightweight antennas in 'sweet spots'. Includes 1.2m mast.

R42.

TechTip. SILPRG silicone along tops of corrugated iron ribs and closing top edge of tripod improves TRM IRON security and reduces dirt build-up that aggravates corrosion.



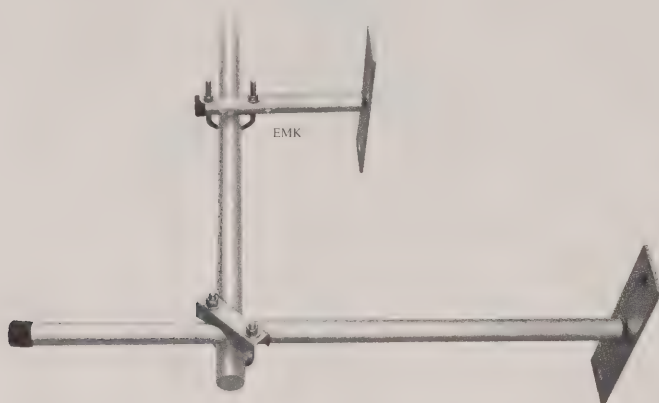
TRM TILE

Tile Roof Tripod Mount for freestanding fitting of lightweight antennas in 'sweet spots'. Includes 1.2m mast. Holes allow for fixing to batten with roofing screws etc.

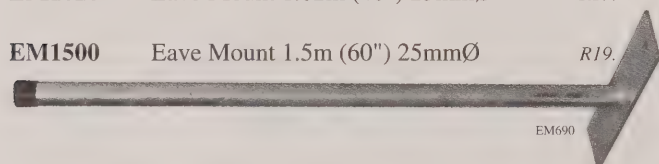
R42.

Eave Mounts

EMK Eave Mount Kit Complete. 1 x 230mm (9") x 25mmØ eave bracket, 1 x 690mm (27") x 25mmØ eave bracket, 2 x 5/16" U bolts, nuts, washers & 1 x offset vee block. Short bracket fixes to fascia board, longer to brickwork below, to support up to 4.5m of masting. Offset vee block allows use with almost any dimension between fascia board and wall. *R32.6*



- | | | |
|---------------|------------------------------|--------------|
| EM230 | Eave Mount 230mm (9") 25mmØ | <i>R11.3</i> |
| EM280 | Eave Mount 280mm (11") 25mmØ | <i>R11.3</i> |
| EM460 | Eave Mount 460mm (18") 25mmØ | <i>R13.6</i> |
| EM690 | Eave Mount 690mm (27") 25mmØ | <i>R15.8</i> |
| EM1020 | Eave Mount 1.02m (40") 25mmØ | <i>R17.</i> |
| EM1500 | Eave Mount 1.5m (60") 25mmØ | <i>R19.</i> |

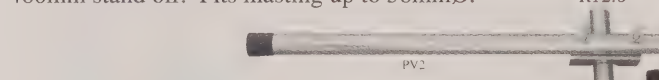


Stand-Off & Stacking Brackets

PV10 Vertical Polarisation Bracket 270mm x 25mmØ, gives 200mm stand off from mast up to 60mmØ. *R9.*



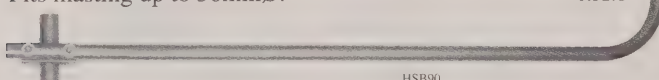
PV2 Vertical Polarisation Bracket 500mm x 25mmØ, gives 460mm stand off. Fits masting up to 56mmØ. *R12.6*



HSB45 Horizontal Stand-off, 450mm x 25mmØ. Fits masting up to 56mmØ. *R10.8*



HSB90 Horizontal Stand-off, 1.0m x 25mmØ. Fits masting up to 56mmØ. *R12.8*



HVSB90 Horizontal & Vertical Stand-off, 900mm x 25mmØ. Fits masting up to 56mm Ø. *R12.8*



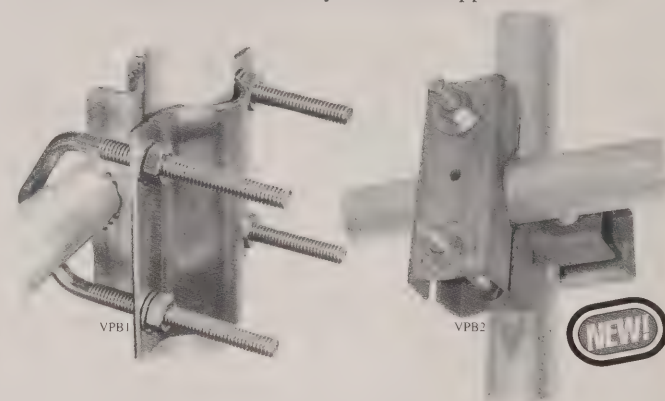
DVM1 Double Vertical Mount, 1mx 25mmØ. Use for any two vertically polarised antennas, even stacking. *R11.6*



Vertical Crossbar Mounts

VPB1 Support for up to 32mmØ crossbar. The strongest crossbar support of it's kind. *R15.5*

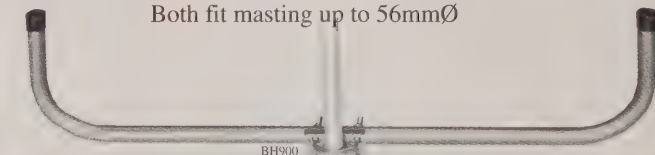
VPB2 Vertical Mount Assembly, crossbar support. *R14.*



Stacking Bars

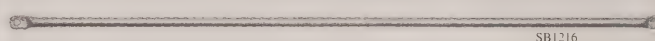
BH550 Bullhorn Horn 550mm x 25mmØ. For two antennas to be fitted 550mm. apart at the same height. For stacking of UHF antennas for +3dB extra gain. *R18.1*

BH900 Bullhorn Horn 900mm x 25mmØ. As BH550 with mounting bracket centres 900mm apart. *R21.*
Both fit masting up to 56mmØ



Stay Bars & Collars

- | | | |
|---------------|------------------------------|--------------|
| SB0416 | Stay Bar .46m (1'6") x 16mmØ | <i>R8.1</i> |
| SB1216 | Stay Bar 1.2m (4') x 16mmØ | <i>R10.5</i> |
| SB1816 | Stay Bar 1.8m (6') x 16mmØ | <i>R13.</i> |
| SB2416 | Stay Bar 2.4m (8') x 16mmØ | <i>R15.</i> |



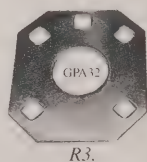
SBC25 Stay Bar Collar for 25mm Ø mast *R9.4*

SBC32 Stay Bar Collar for 32mm Ø mast *R9.4*

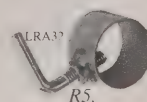


Guying Accessories

- | | |
|--------------|--------------------------------|
| GPA32 | Guy Plate A for 32mm / 1.25" Ø |
| GPB39 | Guy Plate B for 39mm / 1.5" Ø |
| GPC45 | Guy Plate C for 45mm / 1.75" Ø |
| GPD50 | Guy Plate D for 50mm / 2" Ø |



- | | |
|--------------|--------------------------------|
| LRA32 | Lock Ring A for 32mm / 1.25" Ø |
| LRB39 | Lock Ring B for 39mm / 1.5" Ø |
| LRC45 | Lock Ring C for 45mm / 1.75" Ø |
| LRD50 | Lock Ring D for 50mm / 2" Ø |



Guying Accessories continued

TBS Thimbles Heavy Duty



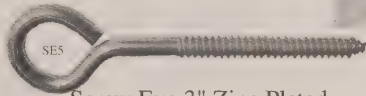
R.96

GW180/7.9 Guy Wire 180m
7 strands each .9mm

R87.78

GW30/6X1.1 Guy Wire 30m
6 strands ea. 1.12mm

R17.



SE3 Screw Eye 3" Zinc Plated

R1.6

SE4 Screw Eye 4" Zinc Plated

R1.8

SE5 Screw Eye 5" Zinc Plated

R1.9

SE7 Screw Eye 7" Zinc Plated

R2.4

GBF Guy Bracket Fascia,
Hot Dip Galvanised. Secures
guy wires beyond roof edge
right through fascia board.

R23.8



GCG25 Guy Cleat, Galvanized. 25mm
between each 10mmØ mounting
hole, 25mmØ guy hole.

R5.2

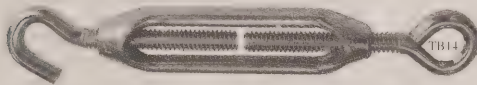


TB14 Turnbuckle Hook & Eye 1/4" ZP

R2.3

TB516 Turnbuckle Hook & Eye 5/16" ZP

R3.2



GWC3 Guy Wire Clamp 3mm zinc plated

R2.6

GWC5 Guy Wire Clamp 5mm zinc plated

R3.



Coach Screws

CS51615 Coach Screw 5/16" x 1&1/2" ZP

R.30.

CS51625 Coach Screw 5/16" x 2&1/2" ZP

R.40.

CS3815 Coach Screw 3/8" x 1&1/2" ZP

R.40.

CS3825 Coach Screw 3/8" x 2&1/2" ZP

R.50.



U Bolts

UB1450 1/4" x 90mm x 50mm ZP

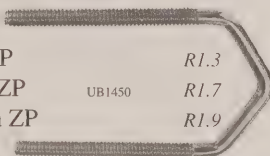
R1.3

UB51685 5/16" x 85mm x 65mm ZP

R1.7

UB516140 5/16" x 140mm x 65mm ZP

R1.9



Vee Blocks

VBP Vee Block Plated

R2.

VBOFFSET Vee Block Offset Plated

R1.8

VBNEST Vee Block Ubolt Nuts & Washers

R4.



Nuts

HN316P 3/16" Hexagon Nut, plated.

R.10

HN14P 1/4" Hexagon Nut, plated.

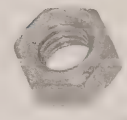
R.10

HN516P 5/16" Hexagon Nut, plated.

R.16

HN38P 3/8" Hexagon Nut, plated.

R.22



WN316 Wing Nut 3/16", plated.

R.40



Screws & Bolts, Metalthread

SC3162 Screw 3/16" x 2" zinc plated, pan head
Replacement antenna screw.

R.30



CB382P Cup Square Bolt 3/8" x 2" plated.

R.70

Fixes CFB.... with MFS bracket (p.13) etc.

CB3825P Cup Square Bolt 3/8" x 2&1/2" Pl.

R.80

Square shoulder, round head, for timber or steel.



SS3825P Set Screw 3/8" x 2 1/2", plated

R1.9

Thread all the way up the shank to a hexagon head.



Washers Flat

WS316ZP 3/16" Washer, plated

R.20

WS14ZP 1/4" Washer, plated

R.10

WS516ZP 5/16" Washer, plated

R.20

WS38ZP 3/8" Washer, plated

R.20



Masonry Fixings

SAM840 8 x 40mm Sleeve Anchor, plated

R.70

SAM890 8 x 90mm Sleeve Anchor, plated

R1.5

SAM1050 10 x 50mm Sleeve Anchor, plated

R1.

SAM1075 10 x 75mm Sleeve Anchor, plated

R1.2

SB1060

Screwbolt. Screws
directly into concrete,
10mm Ø hole 60mm+
deep.

R5.6



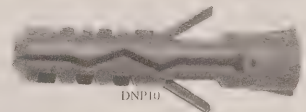
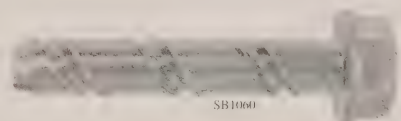
DNP10 Wall Plug.

Use CS51615 in mortar
or brick etc. 10mm Ø hole
60mm+ deep.

R.62

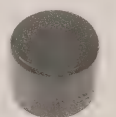
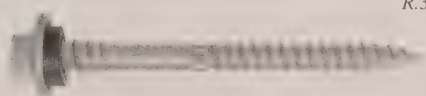
DNP12 Wall Plug. Use
CS3825 in mortar or brick etc.
12mm Ø hole 75mm+ deep.

R.96



RS1265 Roofers Screw galvanised, with neoprene washer.
12 gauge 65mm long. For corrugated iron roof.

R.36



Mast Caps

CAP-M25 Caps any 25mm Ø tube

R.64

CAP-M32 Caps any 32mm Ø tube

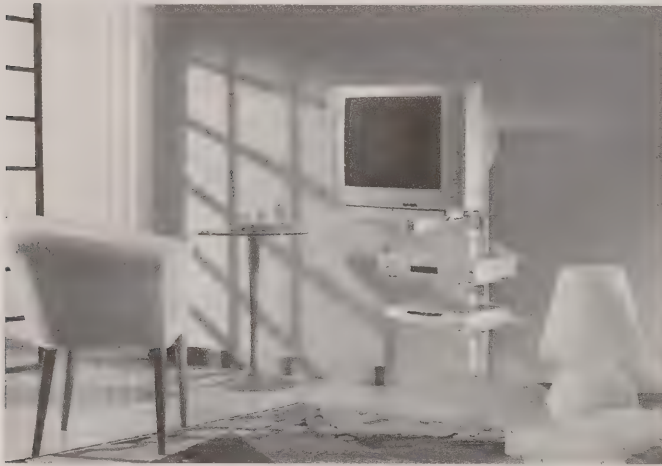
R.64



MOUNTING BRACKETS

TV and Loudspeaker Mounting Brackets

Quality mounting brackets that make any TV look good. Mounting plates suit stud framed cavity, brick or concrete walls. Elegant snap on mounting plate covers, adjustable Tilt. Restraining straps and mounting kits included.

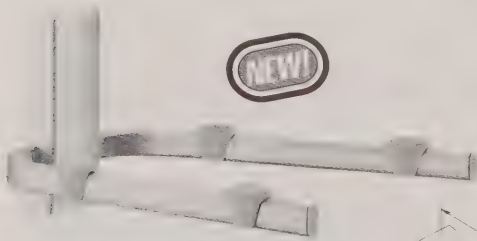
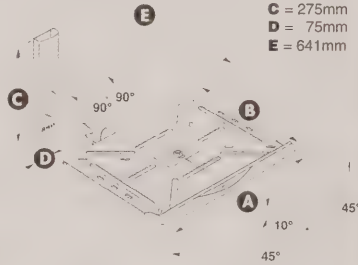


Space System



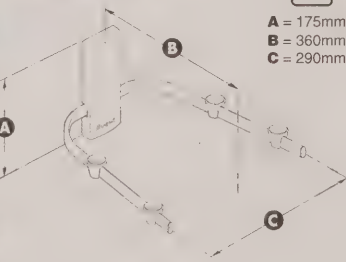
40kg max
~51-83cm

BM-R25S SILVER Large rotating TV wall bracket. Silver colour, suits televisions of approx. 51-63cm diag. screen size and up to 40kg weight. R216.

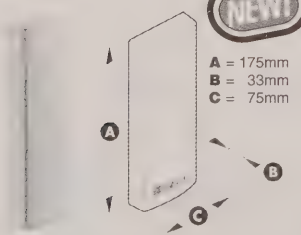


20kg max
A = 175mm
B = 360mm
C = 290mm

BM-SYSBOXS SILVER Shelf of minimalist structure for DVD, Receiver, VCR etc. R94.



Space System

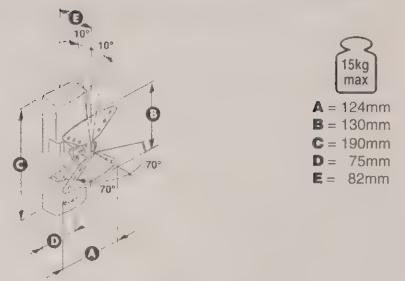


A = 175mm
B = 33mm
C = 75mm

BM-COVERS SILVER Conceals your system cables all the way down to the skirting to complete the look. R24.



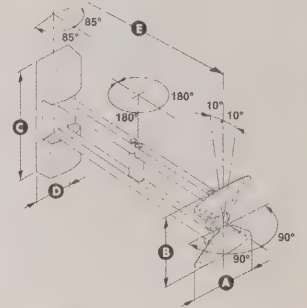
BM-LCD30 SILVER
LCD panel wall fix bracket. R178.



Space System



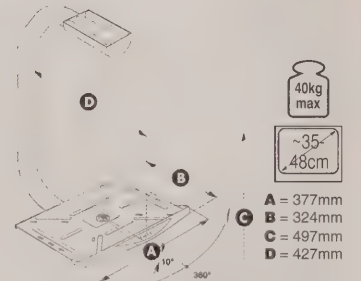
BM-LCDS30 SILVER LCD panel swivel wall fix bracket. R336.



15kg max
A = 124mm
B = 130mm
C = 190mm
D = 75mm
E = 410mm



Space System



40kg max
~35-48cm
A = 377mm
B = 324mm
C = 497mm
D = 427mm

BM-M19S SILVER Small ceiling fix TV wall bracket. Silver colour, suits televisions of approx. 35-48cm diag. screen size and up to 40kg weight. Cool look. R216.

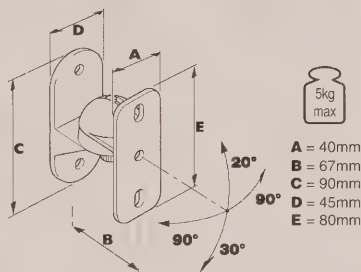


BM-S60S SILVER speaker brackets for ceiling mount applications, 1 x pair. Each supports maximum of 2kg weight. Rotates through 360° with up to 40° tilt. R38.



A = 80mm
B = 41mm
C = 85mm

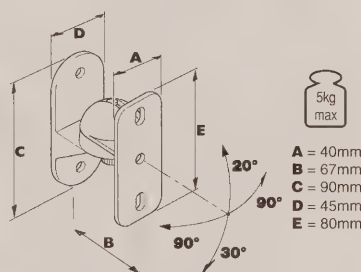
Space System



A = 40mm
B = 67mm
C = 90mm
D = 45mm
E = 80mm

BM-S50S SILVER speaker brackets for wall mount applications, 1 x pair. Each supports maximum of 5kg weight. Ball socket swivel, locks into required position. R36.

Swip



A = 40mm
B = 67mm
C = 90mm
D = 45mm
E = 80mm

BM-SXS BLACK speaker brackets, 1 x pair. As BM-S50S but in black and budget Swip presentation. R31.

Swip

Fixing plate 250 x 70mm. 8mmØ mounting holes offset from bracket centre by 6mm permit a strong stud mount.



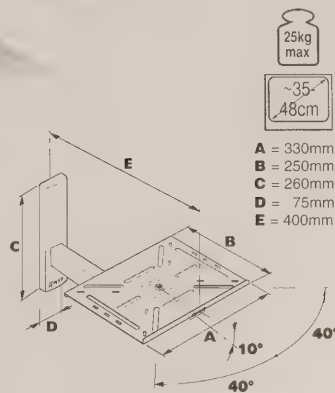
TechTip. vital measurements for selecting your bracket are:
1/ distance between TV cabinet feet,
2/ depth of the set,
3/ weight of the set.



BM-SES SILVER Small fixed TV wall bracket. Silver colour, suits televisions of approx. 35-48cm diag. screen size and up to 25kg weight. R78.

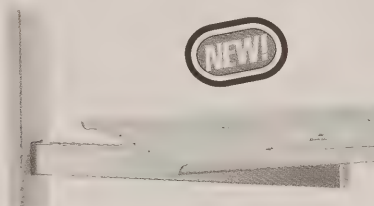
BM-SEB BLACK as BM-SES R78.

Swip



~35-48cm

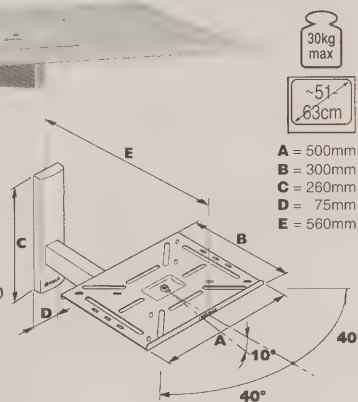
A = 330mm
B = 250mm
C = 260mm
D = 75mm
E = 400mm



BM-MS SILVER Medium fixed TV wall bracket. Silver colour, suits televisions of approx. 51-63cm diag. screen size and up to 30kg weight. R98.

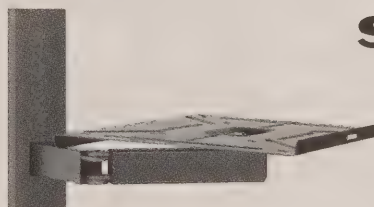
BM-MB BLACK as BM-MS. R98.

Swip



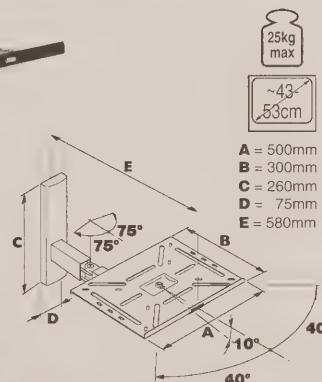
~51-63cm

A = 500mm
B = 300mm
C = 260mm
D = 75mm
E = 560mm



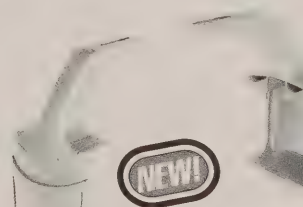
BM-MRB BLACK Medium rotating TV wall bracket. Black colour, suits televisions of approx. 43-53cm diag. screen size and up to 25kg weight. R138.

Swip



~43-53cm

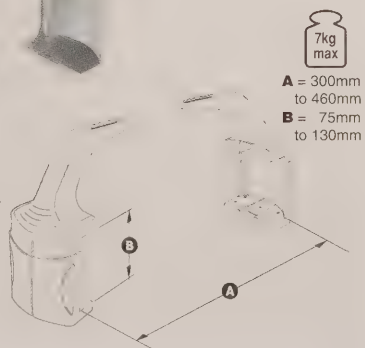
A = 500mm
B = 300mm
C = 260mm
D = 75mm
E = 580mm



BM-VCRS SILVER adjustable DVD, Receiver or VCR etc. mount. Fits below any of the above brackets. R78.

BM-VCRB BLACK as BM-VCRS. R78.

Swip



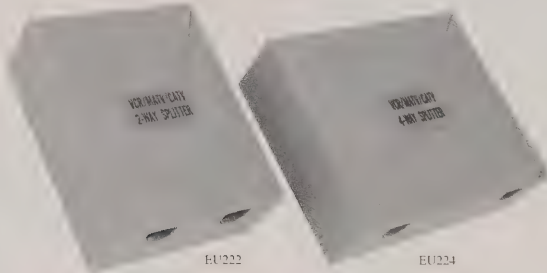
A = 300mm to 460mm
B = 75mm to 130mm

SPLITTERS and TAPS / COUPLERS

Splitters or Power Dividers 1GHz. 75 Ohm

Traditional Screw & Saddle Splitters unshielded

- EU222** 2 way screw & saddle, One Port Pwr Pass. R4.8
EU223 3 way screw & saddle, One Port Pwr Pass. R5.6
EU224 4 way screw & saddle, One Port Pwr Pass. R7.8



TechTip. F type connectors provide a better quality RF connection which adds minimum disturbance to signal quality. All Port Power Pass Small F type splitter, Air Suspended.

- SP275F** 2 way F type.
 R1.58



One Port Power Pass splitters. Printed Circuit Board construction with equalization and impedance matching.

- SP275FP** 2 way F type,
 power pass one port.
 R4.6

- SP375FP** 3 way F type,
 power pass one port.
 R5.6

TechTip. SP375FP
 -5.5dB per port.

- SP475FP** 4 way F type,
 power pass one port.
 R7.4

- SP675FP** 6 way F type,
 power pass one port.
 R8.2

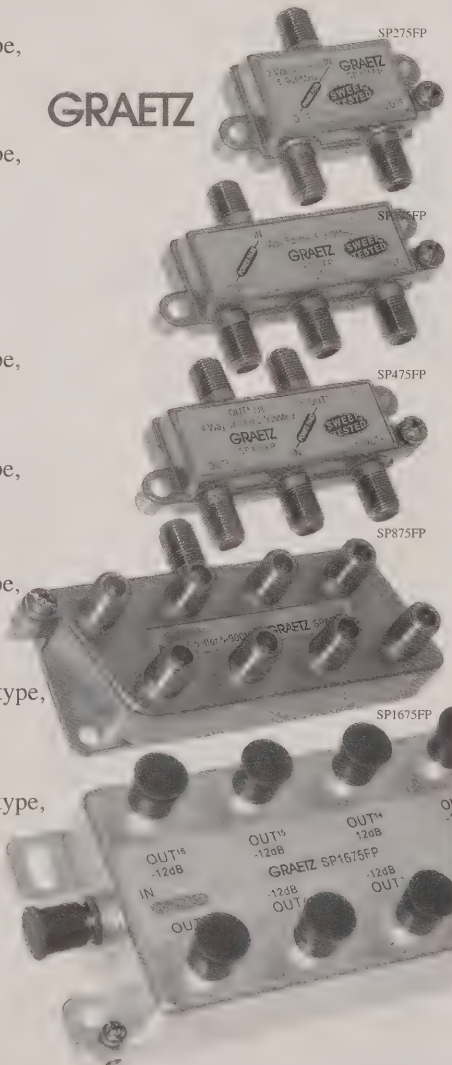
- SP875FP** 8 way F type,
 power pass one port.
 R10.4

- SP1275FP** 12 way F type,
 power pass one port.
 R36.

- SP1675FP** 16 way F type,
 power pass one port.
 R42.

TechTip
 SP1675FP is super efficient with only 12dB insertion loss for 16 outputs.

GRAETZ



NEW One Port Power Pass splitters. Quality PCB construction. Higher isolation and return loss. Port positions permit neater results and better weather protection. Shielding exceeds ≥ 120 dB.

- SP275FPV** R9.8
 2 way F type,
 power pass one port

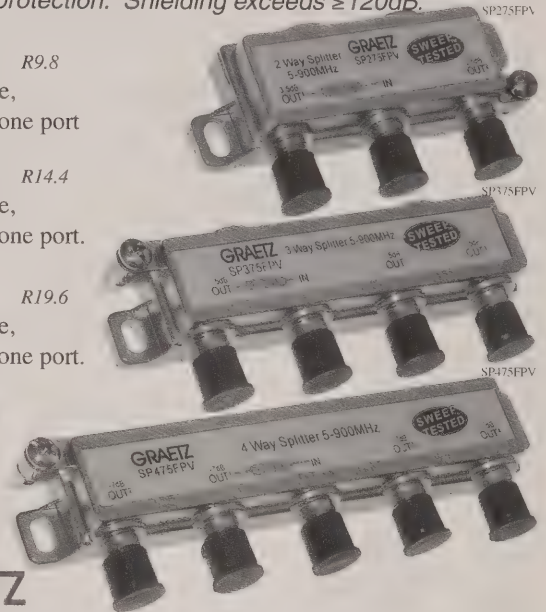
- SP375FPV** R14.4
 3 way F type,
 power pass one port.

- SP475FPV** R19.6
 4 way F type,
 power pass one port.



GRAETZ

TechTip. splitters and taps must be handled with care as the electro-magnetic structure of ferrite is permanently damaged by the shock that results from dropping on a hard surface!



Plug In PAL type Splitters 1GHz

- SUVTP** 2 way splitter PAL type connectors, *Plastic*. Male input to 2 x Female outputs. Power pass all ports.
 R3.4

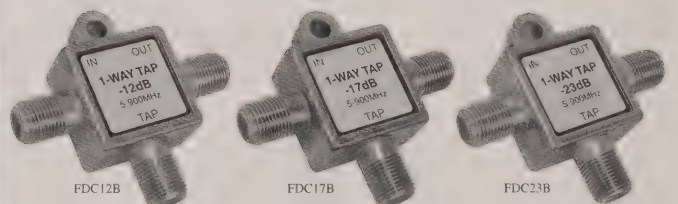
- SUVTM** 2 way splitter PAL type connectors, *Metal*. Male input to 2 x Female outputs. Power pass all ports.
 R4.2

TechTip. sometimes called Power Dividers, splitters etc. divide or mix R.F. power across their entire frequency range, unlike duplexers etc. that are frequency selective.



Taps and Directional Couplers 1GHz

Low cost directional couplers, Air Suspended construction.



- FDC12B** 1 out -12dB, insertion loss 1dB
FDC17B 1 out -17dB, insertion loss 1dB
FDC23B 1 out -23dB, insertion loss 1dB

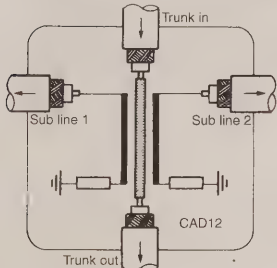
- R2.2
 R2.2
 R2.2

Unique **FRACARRO** high performance couplers provide the convenience of screw & saddle thanks to precision design and unique shielded terminals.

		TAP VALUE	IN-OUT LOSS	
CD11	1 tap	-10dB	-0.8-1.1dB	R19.
CD141	1 tap	-14dB	-0.3-0.5dB	R19.
CD201	1 tap	-20dB	-0.2-0.6dB	R19.
CD261	1 tap	-26dB	-0.2-0.7dB	R19.
CD12	2 tap	-10dB	-1.3-1.8dB	R26.
CD142	2 tap	-14dB	-0.6-1.1dB	R26.
CD202	2 tap	-20dB	-0.6-1.1dB	R26.
CD262	2 tap	-26dB	-0.7-1.2dB	R26.
CD144	4 tap	-14dB	-0.8-2.8dB	R38.
CD204	4 tap	-20dB	-0.3-1.2dB	R38.
CD264	4 tap	-26dB	-0.3-1.2dB	R38.
CAD11	1 tap	-27/12dB	-0.1-0.7dB	R18.
CAD12	2 tap	-27/13dB	-0.1-0.8dB	R20.
CAD13	3 tap	-27/15dB	-0.2-2dB	R32.
CAD14	4 tap	-27/15dB	-0.1-1.9dB	R36.
CN9	Optional housing for FR couplers			R4.

TechTip. CD models use ferrite whilst CAD models stripline technology to provide higher loss at lower frequencies thereby helping equalise cable losses at higher frequencies.

FRACARRO



CD264/CAD14 ETC. IN
OPTIONAL CN9 HOUSING



Quality 5-1,000MHz F connector taps or couplers.
High isolation, Return Loss $\geq 18\text{dB}$ @ 500MHz.

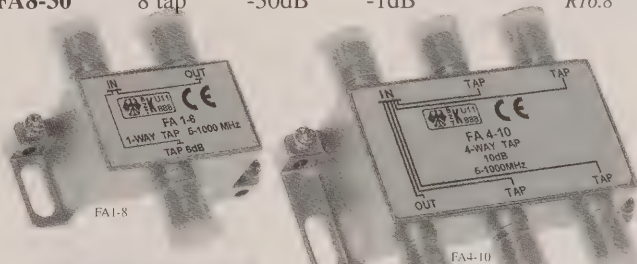
transmedia
Back in Contact

		TAP VALUE	IN-OUT @500MHz	
FA1-6	1 tap	-6.5dB	-2dB	R8.4
FA1-8	1 tap	-8.5dB	-2dB	R8.4
FA1-10	1 tap	-10dB	-1.3dB	R8.4
FA1-12	1 tap	-12.5dB	-0.8dB	R8.4
FA1-16	1 tap	-16dB	-0.8dB	R8.4
FA1-20	1 tap	-20dB	-0.6dB	R8.4
FA1-24	1 tap	-24dB	-0.6dB	R8.4
FA1-30	1 tap	-30dB	-0.6dB	R8.4

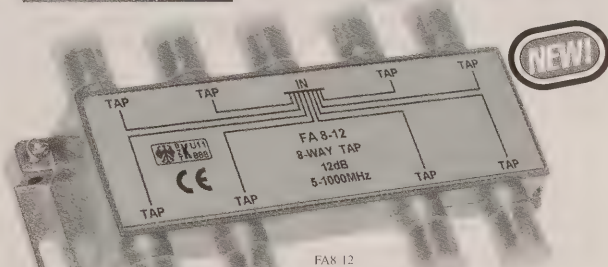
		TAP VALUE	IN-OUT @500MHz	
FA2-8	2 tap	-8.5dB	-4dB	R12.6
FA2-10	2 tap	-10dB	-3dB	R12.6
FA2-12	2 tap	-12.5dB	-1.8dB	R12.6
FA2-16	2 tap	-16dB	-1dB	R12.6
FA2-20	2 tap	-20dB	-1dB	R12.6
FA2-24	2 tap	-24dB	-1dB	R12.6
FA2-30	2 tap	-30dB	-0.6dB	R12.6

SPLITTERS & COUPLERS 1GHz

		TAP VALUE	IN-OUT @500MHz	
FA4-10	4 tap	-10dB	-6dB	R16.8
FA4-12	4 tap	-12dB	-4dB	R16.8
FA4-14	4 tap	-14dB	-2.5dB	R16.8
FA4-16	4 tap	-16dB	-1.7dB	R16.8
FA4-18	4 tap	-18dB	-1.5dB	R16.8
FA4-20	4 tap	-20dB	-1.3dB	R16.8
FA4-24	4 tap	-24dB	-0.6dB	R16.8
FA4-27	4 tap	-27dB	-0.6dB	R16.8
FA4-30	4 tap	-30dB	-0.6dB	R16.8
FA8-12	8 tap	-12dB	-4.5dB	R16.8
FA8-14	8 tap	-14dB	-3.9dB	R16.8
FA8-16	8 tap	-16dB	-2.4dB	R16.8
FA8-20	8 tap	-20dB	-1.4dB	R16.8
FA8-30	8 tap	-30dB	-1dB	R16.8



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Multi - Taps 1GHz.

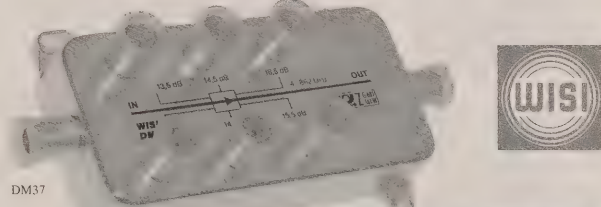
Varying tap values help equalize signal levels in star wired 5-860MHz MATV systems. Power Pass from In to Out.
Specifications at 500MHz. Return Loss $\geq 20\text{dB}$.

DM37 -12.5dB/-13.5dB/-14dB/-14.5dB/-15.5dB/-16.5dB
6 way WISI MultiTap In to Out insertion loss -4.6dB R16.

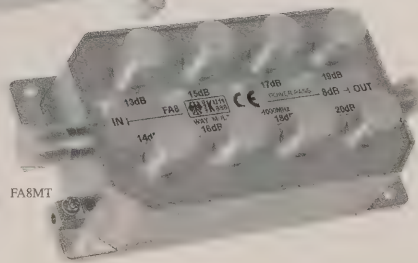
FA4MT -13dB/-14dB/-15dB/-16dB
In to Out insertion loss -4dB R19.8

FA6MT -13dB/-14dB/-15dB/-16dB/-17dB/-18dB
In to Out insertion loss -6dB R23.6

FA8MT -13dB/-14dB/-15dB/-16dB/-17dB/-18dB/-19dB/-20dB
In to Out insertion loss -8dB R26.2



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Back in Contact



Splitters or Power Dividers Satellite 1st IF

Low loss 900-2,050MHz Strip Line splitters
with slightly higher attenuation over 40-860MHz.
Quality without a high price tag.

SP6125 2 way Satellite Splitter,
Power Pass All Ports, Diode Control

R6.

SP6126 2 way Satellite Splitter,
Power Pass One Port

R6.

SP6122 4 way Satellite Splitter,
Power Pass One Port

R13.8

Quality Inductive 5-2,400MHz splitters
all port Power Pass Diode Control high port to port isolation.

SP22GD 2 way 5-2,400MHz
Split Loss 5.5dB, Return Loss ≥ 16 dB
@1,750MHz **FOXTEL** R11.3
APPROVED

SP32GD 3 way 5-2,400MHz
Split Loss 8dB, Return Loss ≥ 14 dB
@1,750MHz **FOXTEL** R15.9
APPROVED

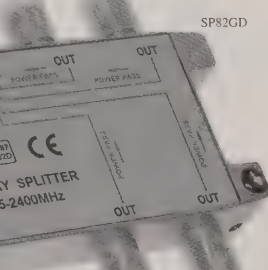
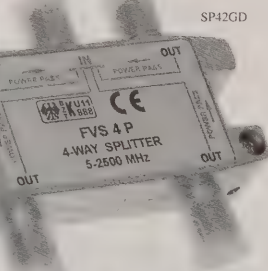
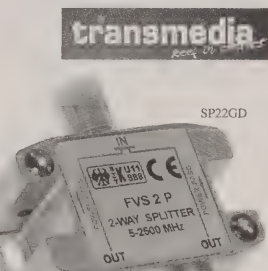
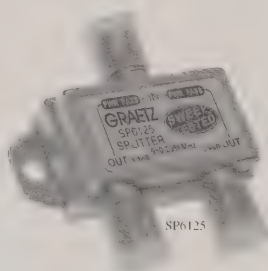
SP42GD 4 way 5-2,400MHz
Split Loss 10.5dB Return Loss ≥ 12 dB
@1,750MHz R20.2

SP62GD 6 way 5-2,400MHz
Split Loss 14dB Return Loss ≥ 10 dB
@1,750MHz R34.2

SP82GD 8 way 5-2,400MHz
Split Loss 15dB Return Loss ≥ 10 dB
@1,750MHz R39.8

TechTip. splitters with
Diode Controlled power
pass permit any receiver
connected to power the
LNBF. However the
higher voltage will rule the
polarity switch.

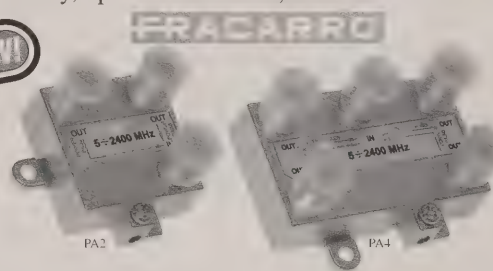
Alternately the One Port
Power Pass solution
requires the receiver
connected to the Power
Pass to always be
connected if the other
receivers are to function.



Premium Quality Inductive 5-2,400MHz splitters
all port Power Pass, Diode Control. High Return Loss.
Small sizes, fit behind outlet plates.

1,750MHz Loss & Outlet to Outlet isolation shown as Isol.

PA2	2 way, Split Loss ≤ 5.5 dB, Isol. ≥ 20 dB	R21.
PA3	3 way, Split Loss ≤ 10 dB, Isol. ≥ 22 dB	R28.
PA4	4 way, Split Loss ≤ 11 dB, Isol. ≥ 26 dB	R36.
PA6	6 way, Split Loss ≤ 13.5 dB, Isol. ≥ 22 dB	R50.
PA8	8 way, Split Loss ≤ 15.5 dB, Isol. ≥ 20 dB	R62.



NEW 5-2,050MHz Premium
Quality Inductive splitters
with all input and output
ports on one side. All
port Power Pass with
Diode Control. High
Return Loss.

1,750MHz Loss &
Outlet to Outlet
isolation
shown.



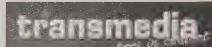
SP22GDV	2 way, Split Loss ≤ 5.5 dB, Isol. ≥ 20 dB	R9.3
SP32GDV	3 way, Split Loss ≤ 10 dB, Isol. ≥ 22 dB	R13.3
SP42GDV	4 way, Split Loss ≤ 11 dB, Isol. ≥ 26 dB	R18.1

2GHz Taps or Couplers for Sat & Terrestrial

5-2,500MHz F connector taps.

@ 1,750MHz outlet isolation ≥ 18 dB, Return Loss ≥ 14 dB.

Power Pass In to Out.



		TAP VALUE	IN-OUT @ 5-950MHz	
FAS1-6	1 tap	-6dB	-3.5dB	R9.4
FAS1-8	1 tap	-8dB	-3dB	R9.4
FAS1-10	1 tap	-10dB	-2dB	R9.4
FAS1-12	1 tap	-12dB	-2dB	R9.4
FAS1-15	1 tap	-15dB	-1dB	R9.4
FAS1-20	1 tap	-20dB	-1dB	R9.4

		TAP VALUE	IN-OUT @ 5-950MHz	
FAS2-10	2 tap	-10dB	-3.5dB	R13.6
FAS2-12	2 tap	-12dB	-3.5dB	R13.6
FAS2-15	2 tap	-15dB	-3dB	R13.6
FAS2-20	2 tap	-20dB	-3dB	R13.6

		TAP VALUE	IN-OUT @ 5-950MHz	
FAS4-12	4 tap	-12dB	-5dB	R17.8
FAS4-15	4 tap	-15dB	-4.5dB	R17.8
FAS4-20	4 tap	-20dB	-4.5dB	R17.8
FAS4-25	4 tap	-25dB	-4dB	R17.8

5-2,500MHz F connector Sat & Terrestrial taps.
High Tap Isolation and Return Loss. Power Pass In to Out.

DE1-10	1 tap	TAP VALUE -10dB	IN-OUT @ 1.750MHz/ -1.6dB	R20.
DE1-14	1 tap	-14dB	-1.2dB	R20.
DE1-18	1 tap	-18dB	-.9dB	R20.
DE1-22	1 tap	-22dB	-.8dB	R20.
DE2-10	2 tap	TAP VALUE -10dB	IN-OUT @ 1.750MHz/ -2.5dB	R23.
DE2-14	2 tap	-14dB	-1.8dB	R23.
DE2-18	2 tap	-18dB	-1.5dB	R23.
DE2-22	2 tap	-22dB	-1.5dB	R23.
DE4-12	4 tap	TAP VALUE -12dB	IN-OUT @ 1.750MHz/ -5dB	R29.8
DE4-14	4 tap	-14dB	-3dB	R29.8
DE4-18	4 tap	-18dB	-1.5dB	R29.8
DE4-22	4 tap	-22dB	-1.2dB	R29.8
DE8-16	8 tap	TAP VALUE -16dB	IN-OUT @ 1.750MHz/ -5.5dB	R55.
DE8-20	8 tap	-20dB	-4.5dB	R55.
DE8-25	8 tap	-25dB	-2dB	R55.



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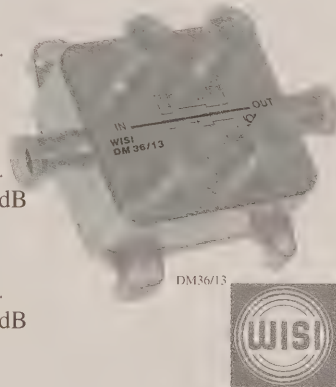


2GHz Multi Taps

4-2,300 MHz 4 output MultiTaps.

The quality way to distribute QPSK Satellite 1st IF.
In to Out loss quoted @ 860-1,750MHz.

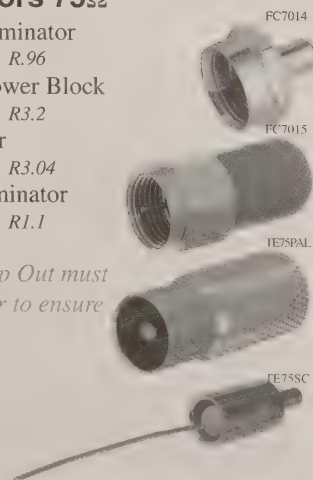
DM36/13	4 tap	R12.
-13dB, -14dB, -15dB, -16dB		
In to Out loss -5dB ±2		
Tap to Tap isolation >30dB		
DM36/16	4 tap	R12.
-16.5dB, -17dB, -17.5dB, -18.5dB		
In to Out loss -4.5dB ±1.5		
Tap to Tap isolation >34dB		
DM36/19	4 tap	R12.
-18.5dB, -19dB, -19.5dB, -20.5dB		
In to Out loss -4.5dB ±1.5		
Tap to Tap isolation >34dB		



Terminators 75Ω

FC7014	F connector 75Ω terminator	R.96
FC7015	F terminator with power Block	R3.2
TE75PAL	PAL male terminator	R3.04
TE75SC	Screw & Clamp terminator	R1.1

TechTip. end of line or last tap Out must be locked to 75Ω with a terminator to ensure stable system function.



Antenna Stacking Couplers

Extra signal and narrower beamwidth are achieved by stacking antennas. Practically nil insertion loss! A clever way to reduce multipath and sidelobes whilst optimising front to back ratio. Equal lengths of antenna coax required.

TMU4	UHF 4 x B4/B5 antennas for +6dB	R38.
TM4	UHF 2 x B4 antennas for +3dB	R30.
TM5	UHF 2 x B5 antennas for +3dB	R30.
TM23C	VHF 2 x B3 antennas for +3dB	R30.

TechTip. see notes about stacking on page 10.

FRACARRO



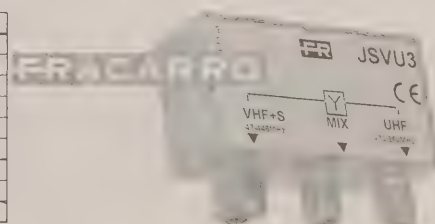
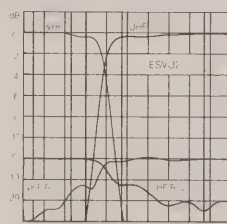
Band Mixers or Separators

Band selective couplers with <.5dB VHF and <1dB UHF insertion loss and >30dB out of band rejection. Choose between quality Screw & Saddle or fully shielded F type.

FRACARRO

TechTip. Fracarro use real coils and test every piece to achieve better performance.

ESVU2	VHF/UHF 2 input mixer, pwr pass VHF	R16.
ESVU	VHF/UHF 2 input mixer, pwr pass UHF	R20.
JSVU2	ESVU2 with F conn. like JS2RT p.43	R38.
JSVU3	VHF & S band 40-446MHz with UHF	R74.



MIXERS OR SEPARATORS BY BAND

ESV45 Au ch.20-36 UHF Low, Au ch.40-75 UHF High & VHF, 3 input mixer. *Power Pass UHF High.* R40.

ESV45S Au ch.20-32 UHF Low, Au ch.38-75 UHF High & VHF, 3 input mixer. *Power Pass UHF High.* R42.

ESV45/50 Au ch.20-49 UHF Low, Au ch.54-75 UHF High & VHF, 3 input mixer. *Power Pass UHF High.* R46.

ESV45/57 Au ch.20-58 UHF Low, Au ch. 61-75 UHF High & VHF, 3 input mixer. *Power Pass both UHF ports.* R46.

ESVUU UHF, UHF & VHF, 3 input mixer. *Power Pass 1 UHF port. (-4dB UHF as UU mix is wide band!)* R46.

ES345/32 Au ch.20-28 UHF Low, Au ch.33-75 UHF High & B3, 3 inp. mix, *Pwr Pass UHF High, Trap B1&2.* R48.

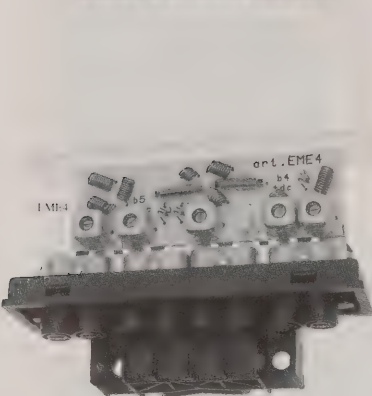
ES345/39 Au ch.20-35 UHF Low, Au ch.41-75 UHF High & B3, 3 inp. mix, *Pwr Pass both UHF, Trap B1&2.* R48.

ES345/40 Au ch.20-39 UHF Low, Au ch.42-75 UHF High & B3, 3 inp. mix, *Pwr Pass UHF High, Trap B1&2.* R48.

ES345/43 Au ch.20-43 UHF L, Au ch.45-75 UHF H & B3, 3 inp. mix, *Pwr Pass B3 to UHF H, Trap B1&2.* R48.

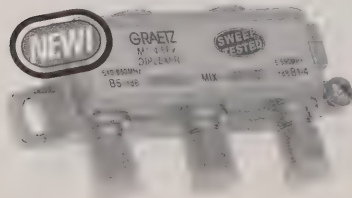
ESL3U UHF, B3 & B's1&2, 3 input mixer. *Power Pass UHF. Band 3 -3dB at Au ch. 5A.* R40.

FRACARRO

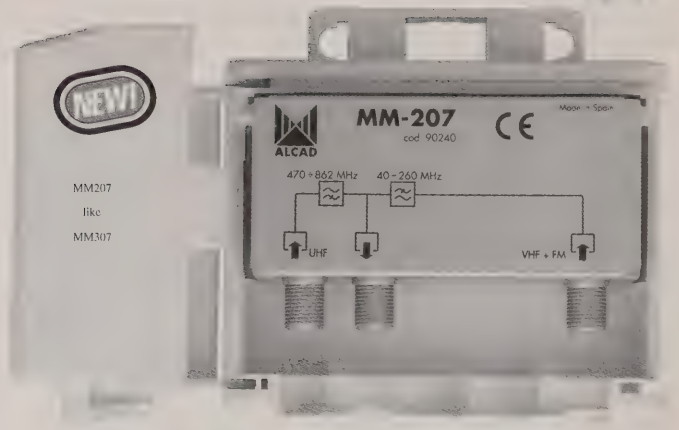
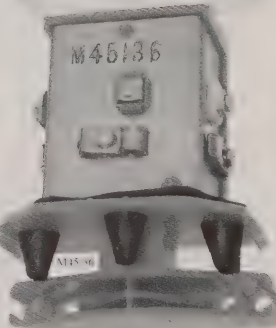


EME4 UHF B5, UHF B4, VHF B3, VHF B1, 4 input mixer. *Power Pass B4&B5.* R62.

M45/36 Mix ^{GRIGIO} Australian channels 0-36^{BLU} with 40-69^{GIALLO}. ≤1dB insertion loss with ≥30dB isolation. *Power Pass 40-69.* Applications include mixing the RF out from satellite TV receivers with off-air TV channels. Weatherproof housing included. R46.



M1-4/5FV Mix bands 1 to 4 with band 5. ≤1dB insertion loss. *Power Pass.* F type connectors all face down to permit neat installation. R12.



MM-207 Weatherproof Outdoor VHF/UHF mixer, quality build from Alcad. ≤-.4dB VHF ≤-.8dB UHF, F connectors. R25.8

MM-307 Weatherproof Outdoor VHF/UHF/UHF mixer, Alcad quality. ≤-.5dB VHF ≤-4.5dB UHF, F connectors. R28.

MX61UVF VHF/UHF F conn. mixer R10.4.

MX51HLF VHF High/Low F mixer R10.4.

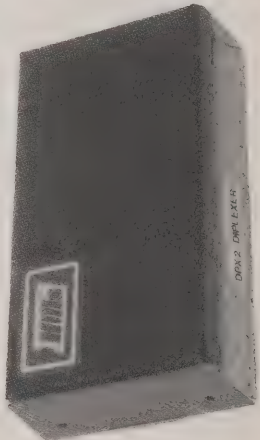
MXA0F Mix Ch0 Au with 2-69. Improved filter design and F connectors in a fully shielded case. Minimal insertion loss, Ch0 RFI and modulator spurious output rejected by diplexer. R16.

DPX2 mix Channels 0-5A & 6-11 (110/135MHz) 1dB through loss. R42.6

DPX3 mix Channels 0-6&9-11 (181/195MHz) 1dB through loss. R42.6

DPX4 mix Channels 0-7&11 (188/215MHz) 1dB through loss. R42.6

DPX6 mix Channels 0&2-11 (53/63MHz) 1.5dB through loss. R36.



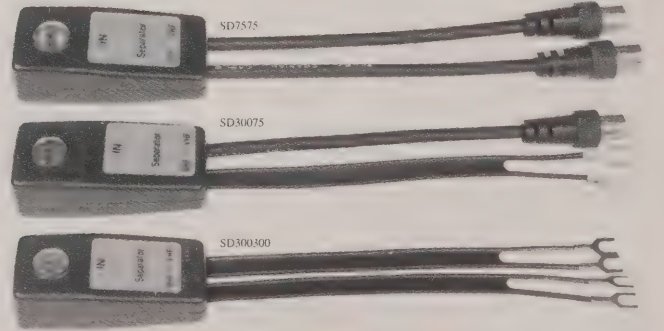
Set Diplexers

Low cost set diplexers with female PAL input connector.

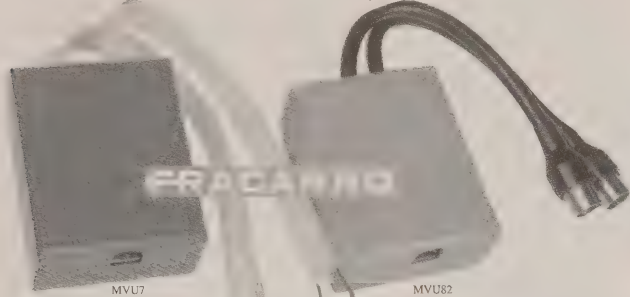
SD7575 75ΩUHF/75ΩVHF out, 75Ω in. R7.

SD30075 300ΩUHF/75ΩVHF out, 75Ω in. R7.

SD300300 300ΩUHF/300ΩVHF out, 75Ω in. R7.



MVU7 300Ω VHF/300Ω UHF out, 75Ω in. *R12.*
MVU82 75Ω VHF/75Ω UHF out, 75Ω in. *R16.*

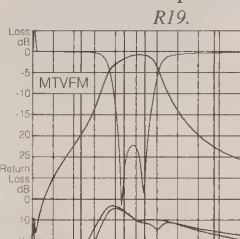


FM Band 2 Coupler

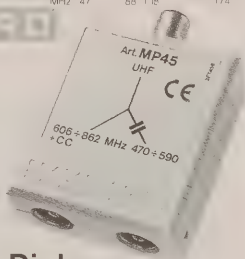
MTVFM Decouple FM from 75Ω TV line with 1dB insertion loss. Complex filter network! Power Pass to TV port.

TechTip.

MTVFM frequency response tells the story in detail for the technically minded



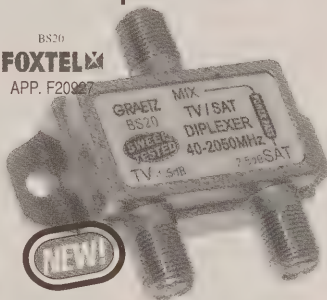
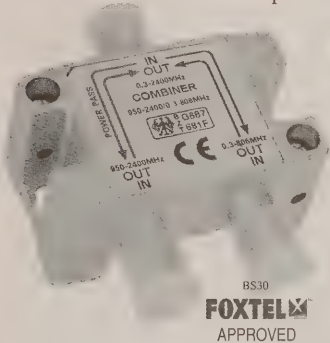
MP45 Mix or separate Band 4 from Band 5. ≤.5dB insertion loss, ≥30dB isolation. B4 470-590MHz, B5 606-862MHz. PAL connectors, fully screened. *R46.*



Satellite IF / VHF UHF Diplexers

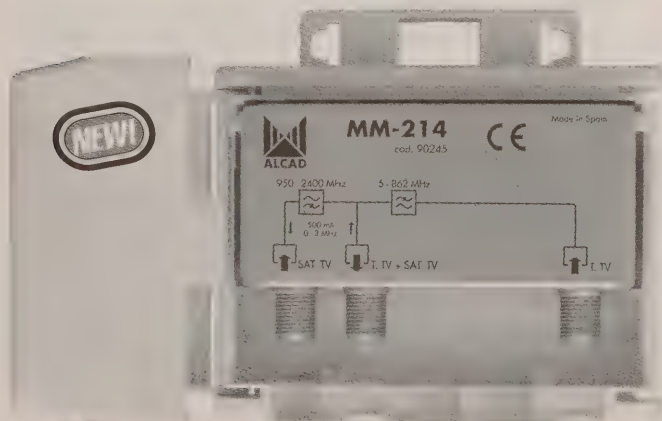
BS20 Mix or separate 950 - 2150MHz 1st I.F. and 40-860 MHz. Power Pass to SAT port.

BS20
APP. F20027



BS30 Mix or separate 1st I.F. and 40-860 MHz. Use a pair to mix and then separate. *R19.*

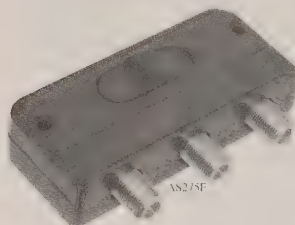
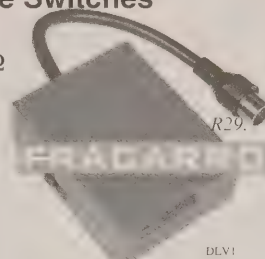
MM-214 Weatherproof, Mix or separate and 950-2400MHz 1st I.F. from 5-862MHz. *R31.8*



Antenna / Game Switches

DEV1

Fracarro 2 way antenna switch, 75Ω screw & saddle connections. Power Pass included. *R29.*



AS275F

2 way antenna switch, 75Ω, F connectors. High Isolation. *R13.*

Large Weatherproof Masthead Housing

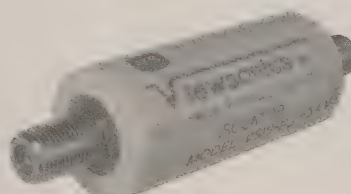
CN1 Complete with weatherproof cable entry, mast clamp & masonry fix hook. 147mm W x 149 H x 66 D inside! Now you can mount almost anything outdoors. *R28.*



MATV & CATV Accessories

IS3kV

3Kv centre conductor and braid isolator. <1dB insertion loss 5-1000 MHz. Blocks potentially dangerous voltages that accumulate in MATV and Cable TV systems. Can provide isolation to non isolated TV outlet plates too. *R15.*



ATTENUATORS & FILTERS

TS1948

Tamper proof F connector cover. Makes connector access very difficult without TS1949 tool.

R2.



TS1949

TS1948

TS1949

Tamper proof cap installation tool.

R23.8

TS2012 Secure F male 75Ω terminator. Requires TS2011 tool to remove, prevents unauthorized connection. R3.

TS2011 Theft proof terminator installation tool. R8.

Attenuators Fixed Value

FATT3 3dB fixed F type m-f 75Ω attenuator. R5.5
FATT6 6dB fixed F type m-f 75Ω attenuator. R5.5
FATT12 12dB fixed F type m-f 75Ω attenuator. R5.5
FATT24 24dB fixed F type m-f 75Ω attenuator. R5.5

'P' series includes Power Pass

FATT6P 6dB fixed F type m-f 75Ω attenuator. R5.5
FATT12P 12dB fixed F type m-f 75Ω attenuator. R5.5
FATT24P 24dB fixed F type m-f 75Ω attenuator. R5.5

PATT3 3dB fixed PAL type m-f 75Ω attenuator. R5.5
PATT6 6dB fixed PAL type m-f 75Ω attenuator. R5.5
PATT12 12dB fixed PAL m-f 75Ω attenuator. R5.5
PATT24 24dB fixed PAL m-f 75Ω attenuator. R5.5

FBLKDC Block AC/DC Power path, ≤1dB 1750MHz R5.96



Attenuators Variable

AT7520M Constant impedance 75Ω 0-20dB variable attenuator mounted in shielded case ready to use. PAL M to F conn. Perfect DVB-T threshold tester! R13.

Range 1 to 20dB in	4 turns
Impedance constant	75Ω
Frequency range	0-1,000MHz
Insertion loss	<0.5dB
5-300MHz	<0.15dB
300MHz-1GHz	<0.45dB
Return loss	≥16dB

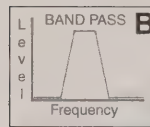


AT7520M

AT7520 Flat freq. response past 820MHz. Solder inside FH-1, behind outlet plates, etc. Don't risk the mismatch potentiometers cause when used as variable attenuators. R8.



AT7520



Band & Channel Pass Filters

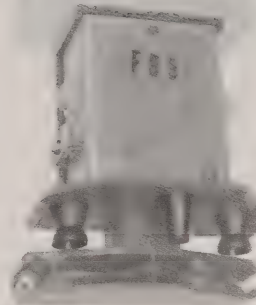
Pass channel or band specified stop the rest. Typical loss ≤1dB.

FB4 Pass B4 only R38.

FB5 Pass B5 only R38.

F5R../. Pass one band 3 channel @-≤1dB whilst trapping specified adjacent channel. Made to order! R70.

FRACARRO



FU/AU29 UHF Channel Pass, pre-aligned to Ch.29. Pass band freq. can be altered ±3 channels with care. Made to order for any UHF channel. R110.

FRACARRO



FU...

FLBP0 Pass channel 0 with 30dB typ. out of band rejection and small insertion loss. See FLBS* R42.

FLBP34 Pass channels 3&4 with 30dB typ. out of band rejection and low insertion loss. See FLBS* R42.



FM (88-108MHz) Rejection Filters

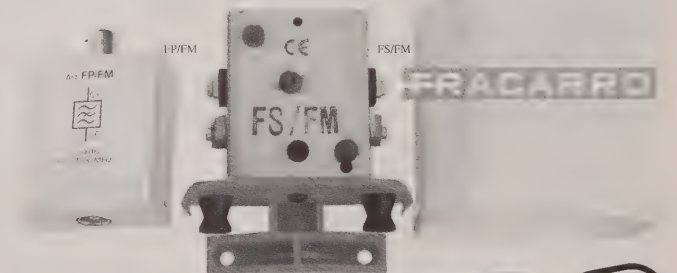
Eliminate FM radio interference. Amplifiers increase harmonics with harmful 88-108MHz harmonics often falling in TV band 3!

FP/FM >-50dB to -55dB over 88-108MHz.

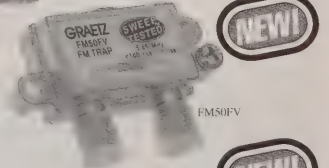
M-F PAL connectors, indoor use only. R24.

FS/FM >-40dB to -50dB 88-108MHz.

Weatherproof screw & saddle terminals. R40.



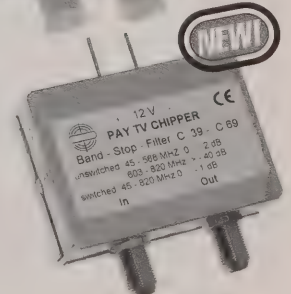
FM50FV >-50dB FM filter, 88-108MHz, F type f to f conn. R8.



FM50FV

FM-50 >-50dB FM filter, 88-108MHz, PAL m to f conn. R8.2

PayTVCtrl Build your own PayTV systems. >40dB control of 603-820MHz whilst passing 45-568MHz with <2dB insertion loss. F type connectors, 12V DC @<40mA. R58.



Band & Channel Stop Filters

Stop channel or band specified pass the rest. Typical loss $\leq 1\text{dB}$.

FS/AU28 Prealigned for max. rejection of AuCh.28 to enable reception of weak UHF. Adjustable ± 3 channels. Allow 1 Ch. either side. Weatherproof. R54.

FS/.. Reject one UHF ch. by 30-40dB selected channels available from stock. R97.

FUA/.. Reject any UHF channel by -40dB to -50dB, specify channel with order. R97.

SF4 Band 4, 2 x -20/30dB notches, user tunable. R50.

SF5 Band 5, 2 x -20/30dB notches, user tunable. R50.

Power Pass SF5 only!

TechTip. SF4 can stop mast amp noise upsetting UHF VCR's.

FE5U

5 notch UHF filter with tune & fine tune controls. For use anywhere in UHF band. Attenuation varies with frequency from -6dB to -20dB per notch. R158.

FLBS0 Stop ch.0 (45-52MHz) with -30dB typical insertion loss $\leq 1\text{dB}$. PAL type m-f conn. R42.

FLBS34 Stop ch 3&4 (FM band) with -30dB typical insertion loss $\leq 1\text{dB}$. PAL type m-f conn. R42.

FLBSP Stop 120-160MHz (pagers) by -30dB typical insertion loss $\leq 1\text{dB}$. PAL type m-f conn. R42.

TFBB1 Braid Breaker, reduces induction of nearby MW broadcasts. $\leq 1\text{dB}$ loss. R62.

TF2BS Band 2 stop filter. Traps 88-108MHz signals etc. typically by $\geq 45\text{dB}$. R62.

TF40HP 40MHz High Pass filter. Traps signals <40MHz etc. typically by $\geq 45\text{dB}$. $\leq 1\text{dB}$ loss. R62.

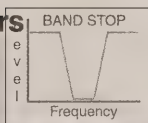
TF160HP 160MHz High Pass filter. Traps pager etc. signals >160MHz. typically by $\geq 45\text{dB}$. $\leq 1\text{dB}$ loss. R62.

TF600HP 600MHz High Pass Filter. Traps band 4 etc. typically by $\geq 45\text{dB}$. $\leq 1\text{dB}$ loss. R62.

TF670HP 670MHz High Pass Filter. Traps low UHF typically by $\geq 45\text{dB}$. $\leq 1\text{dB}$ loss. R62.

TF820LP 820MHz Low Pass Filter. Traps cellphone signal etc. typically by $\geq 60\text{dB}$. $\leq 1\text{dB}$ loss. R62.

TF filters use F connectors and fit inside the Kingray MHB weatherproof masthead box (page 35).



FL3BPMH Weatherproof bandpass filter and combiner with options of 1, 2, and / or 3 inputs. Rejects MW and 27MHz radio -40dB, VHF low -12dB (variable), FM radio -30dB (selectable), 148MHz paging -30dB, UHF comm's -40dB and GSM -20dB and CDMA -30dB, TV <2dB loss.

BL-12 Attenuate bands 1&2 by -12dB PAL M-F. R9.

BL-12F Attenuate bands 1&2 by -12dB F connectors. R9.

BBPAL1 Braid Breaker with PAL type Male to Female connectors, 5-1,000MHz. Reduce AM radio resonance's in longer coax runs. Most effective near the end of a long cable run. R16.

ZCAT2035 TDK ferrite cable clamp filter. Highly effective DVB-T Impulse Noise countermeasure. Easy to fit clip on case with anti slip. 9mm \varnothing cable entry. R8.

Filter Housings

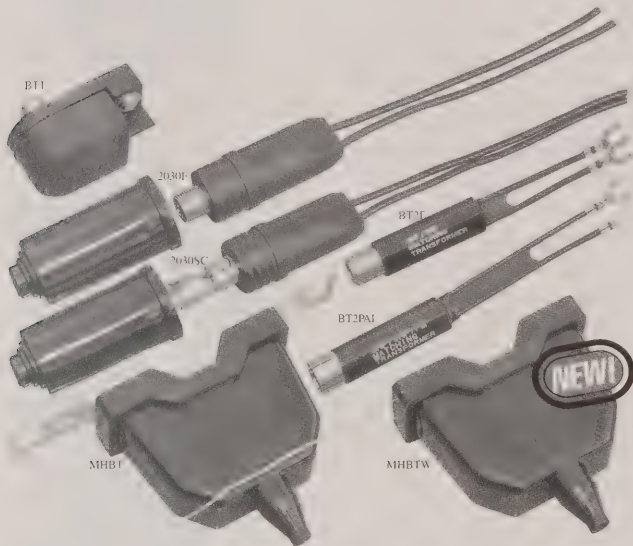
FH1 Case with PAL male and female connectors, 7mm \varnothing trimmer hole. Build your own filters etc. R6.

FH2 Case with 3 x F female connectors. Highly screened suits use with higher power levels. Build your own mixers. R6.

BALUNS AND OUTLET PLATES

Baluns / Matching Transformers

- 2030SC** 300-75Ω Weatherproof antenna balun with screw & clamp terminals and solid wires. *R2.3*
- 2030F** 300-75Ω Weatherproof antenna balun with female F connector and solid wires. *R2.3*
- MHBT** 300-75Ω telnay DL type weatherproof masthead balun with aluminium strap antenna connections. *R3.8*
- MHBTW** 300-75Ω telnay DL type weatherproof balun with wire antenna connections. UV stable plastic. *R3.8*
- BT1** 300-75Ω set balun, 300Ω screw terminals to PAL male connector. *R3.*
- BT2PAL** 75-300Ω set balun, PAL female connector to 300Ω ribbon with spade lugs. *R2.1*
- BT2F** 75-300Ω set balun, F female connector to 300Ω ribbon with spade lugs. *R2.1*



TechTip. a balun provides a proper impedance match between the natural 300Ω impedance of an antenna and 75Ω coax, thereby allowing transfer of maximum energy. Balun is an abbreviation for balanced to unbalanced.

Television Surface Mount Skirting Outlets

Almost upright, reduces likelihood of damage by furniture.

- EU503** PAL outlet small, screw & clamp input. *R3.*
- EU503DE** PAL 2 outlets, screw & clamp input. *R5.*
- EU503F** F connector outlet, F connector input. *R5.*
- EU503FP** PAL outlet, F connector input. *R5.*
- EU503I** PAL out, 2kV dual isolation, screw & clamp. *R5.*



Clipsal Look Television Outlet Series

White outlet plates that match the standard Clipsal GPO shape with screwed mechanism's that can't snap out!

WP5F

One PAL type outlet with F female input, fully screened. *R5.38*

WP5/ISOL

One PAL type 2kV dual isolation outlet, for extra safety. *R6.48*

WP5

One PAL type outlet screw & saddle. *R4.94*

WPDE

Two PAL outlets from one input @ -4dB. Suits TV displays, etc. *R9.66*

WPF

One F female outlet and input, fully screened. *R3.68*

WPFTAP

One PAL outlet from F female for Free To Air, and one F outlet from F for Pay TV. *R3.68*

WPSPL

One PAL outlet @ -4dB with rear Input and Output. *R9.*

WPTVFM One PAL TV outlet and one PAL FM outlet. Integrated TV FM separator. *R9.44*

WPVCR/TV Three PAL TV outlets marked ready for VCR / DVD system. *R16.16*

WPB Blank plate, cover mistakes etc. *R2.74*



Mix-n-Match Outlet Series

Build your outlets to suit each task TV, FM, AV, and Data.

White clip on cover and clear plastic structure you can see through.



WPE6 R2.

Series matches PDL brand GPO's and switches.

WPE4 R2.

Insert removal tool available upon request.

WPE3 R2.

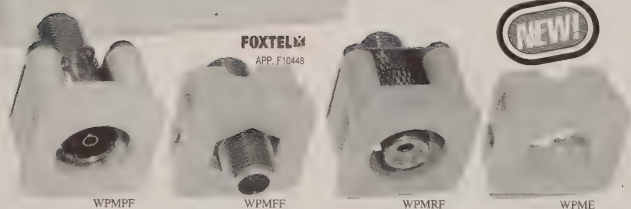
WPMPE, WPMFF and WPMRF Inserts are all Fully Shielded.

WPE2 R2.

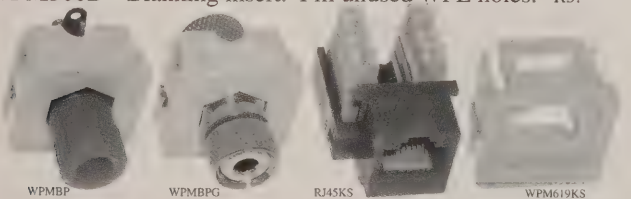
Mechanisms clip in from the front making fall through unlikely.

WPE1 R2.

RJ45KS Cat5E keystone type adapter suits data and phone.



- WPMPE** PAL to F type TV insert. R1.7
- WPMFF** F to F type TV insert *FoxtelApprF10448* R1.5
- WPMRF** RCA to F fully shielded insert. R3.1
- WPMRS** RCA solder, BlackBlueGreenRedYellowWhite. R2.5
- WPME** Empty insert, 9.9mmø 1mm hex hole. R1.
- WPM500B** Blanking insert. Fill unused WPE holes. R5.



- WPMBP** Binding Post plastic, (Red or Black). R3.1
- WPMBPG** Binding Post Gold, (Red or Black). R4.
- RJ45KS** Cat5E requires WPM619KS adapter. R8.4
- WPM619KS** RJ45KS adapter(ClipsalWPM619MM). R1.5
- WPM619M4** RJ11 phone socket looping (White). R13.7

OUTLET PLATES & MECHANISMS

Audio Video Outlet Series

White outlet plates with Binding Posts for loudspeakers and and RCA connectors for High Ω Video and Audio.

WPBP2

Two Binding Posts, Red and Black. Mates with Banana Plugs. R6.1

WPBP4

Four Binding Posts, Red and Black. Mates with Banana Plugs. R9.3

WPRCA2

Two RCA type female terminals. R6.1

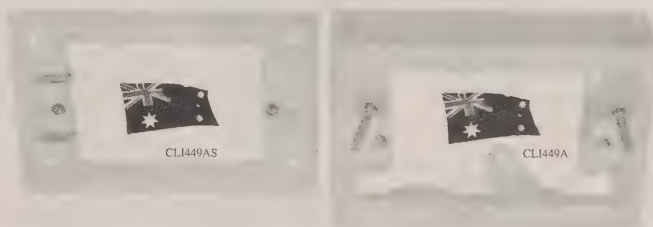
WPRCA4

Four RCA type female terminals. R9.3



CLI449AS Mounting Block 10mm (shallow) R6.12

CLI449A Mounting Block 34mm (deep) R6.02



WCP Plaster mounting clip for W series outlet plates. Also suits power points, switches etc. R1.6

WBS Stud mounting bracket for W series plates. Also suits power points etc. Nails to stud for secure fix. R2.1



Television Flyleads 75Ω

Our flyleads are fully braid and foil shielded!

FL15MMSW

1.5m Male to Male WHITE, Straight PAL 9.5mm connectors. R2.18

FL15MMSB

1.5m Male to Male BLACK, Straight PAL 9.5mm connectors. R2.18

FL18MMRW

1.8m Male to Male WHITE, Straight to Right Angle PAL 9.5mm connectors. R2.52

FL30MMRW

3m Male to Male WHITE, Straight to Right Angle PAL 9.5mm connectors. R3.32

FL50MMRW

5m Male to Male WHITE, Straight to Right Angle PAL 9.5mm connectors. R5.2

FL10MMRW

10m Male to Male WHITE, Straight to Right Angle PAL 9.5mm connectors. R7.8

FL15MFSB

1.5m Male to Female BLACK, Straight PAL 9.5mm connectors. R2.24

FL15MFSW

1.5m Male to Female WHITE, Straight PAL 9.5mm connectors. R2.24

FL18MFSRB

1.8m Male to Female BLACK, Straight to Right Angle PAL 9.5mm conn. R2.8

FL1.8FFMMW

1.5m Male to Male WHITE, Gold Plated QUICK F Male connectors, RG59 cable. R2.6

FL18FMSW

1.8m 'F' Male to PAL 9.5mm Male WHITE, Straight connectors, RG59 cable. R2.6

Suppressed Flyleads

FLD2MFSW 2m

Male to Female, PAL 9.5mm fully shielded crimp connectors WHITE. Noise Suppressors at each end! R6.2

FLD2MMSB 2m

Male to Male, PAL 9.5mm fully shielded crimp connectors BLACK. Noise Suppressors at each end! R6.2

FL.2FFW

Flat 75Ω Sat or Terrestrial TV lead. F Female to F Female, use through windows and door frames etc. 3mm thick 210mm total length with peel and stick. R14.

FLR10MFSB

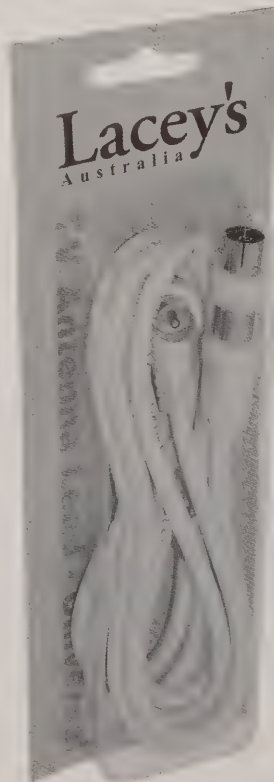
10m Male to Female BLACK cable complete with reel that simplifies storage and repeated use. Straight PAL 9.5mm connectors included. Attractive printed carton with handle included. Barcoded. R32.

**FL18MMUB** Blister Packed

TV lead Universal 1.8m Male to Male WHITE, Straight to Right Angle PAL 9.5mm connectors. female to female adapter included. Barcoded. R3.6

AR1203BP Blister Packed

AV lead. 2 RCA Male to 2 RCA Male BLACK 1.8m. Shielded with coloured connectors. Barcoded. R4.1



Video & Audio (baseband) Leads, Shielded

AR1001 1.8m 1 x RCA
Male to 1 x RCA Male, black
connectors. *R1.88*

AR1202 1.8m *Piggy*
Back 2 x RCA Male to x 2
RCA Male, col conn. *R3.96*

AR1203 1.8m 2 x RCA
Male to 2 x RCA Male,
colour connectors. *R3.14*

AR1204 1.8m 2 x RCA
Male to 2 x RCA Female,
colour connectors. *R3.14*

AR1205 1.8m 2 x RCA
Male to 1 x 3.5mm stereo
Male, col. connectors. *R3.14*

AR1206 1.8m 3.5mm
Stereo Male to 3.5mm Stereo
Male, black connect. *R3.14*

AR1207 1.8m 3.5mm
Mono Male to 2 x RCA
Female, colour connect. *R3.14*

AR1208 1.8m 1 RCA
Male to 2 x RCA Male colour
connectors. *R3.14*

AR1209 1.8m 2 RCA
Female to 2 RCA Female,
colour connectors. *R3.14*

AR1210 was AR1213 10m 2 x RCA
Male to 2 x RCA Male,
colour connectors. *R10.2*

AR1230 was AR1233 3m 2 x RCA
Male to 2 x RCA Male,
colour connectors. *R4.2*

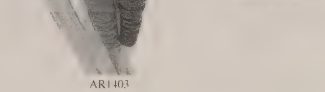
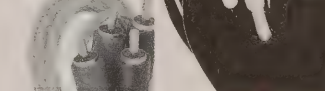
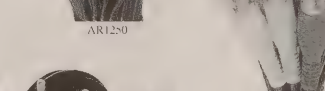
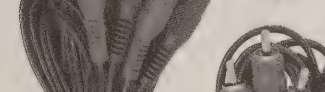
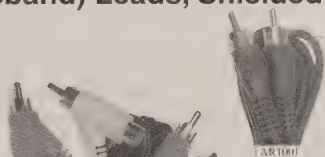
AR1250 was AR1253 5m 2 x RCA
Male to 2 x RCA Male,
colour connectors. *R6.2*

AR1307 1.8m 3 x RCA
Male to 3 x RCA Male,
colour connectors. *R5.2*

AR1317 1.5m
GoldPlated 3 x RCA Male to
3 x RCA Male, 3-6-3mm
colour connectors. *R7.8*

AR1319 10m *Gold*
Plated 3 x RCA Male to 3 x
RCA Male, 3-6-3mm black
colour connectors. *R28.*

AR1403 1.8m *Gold*
Plated 2 x RCA Male to 2 x
RCA Male, clear lead with
colour connectors. *R7.*



AR1407 1.8m 4 x RCA
Male to 4 x RCA Male, black, col
connectors. *R3.14*

AR1503 1.8m *Heavy Duty*
Shielded Lead 2 RCA Male to 2
RCA Male *Gold Plated.* *R13.8*

AR2209 .9m
2 x RCA Male to 2 x RCA Male,
blue twisted 5mmØ x 2. *R4.*

AR2218 1.8m
2 x RCA Male to 2 x RCA Male,
blue twisted 5mmØ x 2. *R5.*

AR2318 1.8m
3 x RCA Male to 3 x RCA Male,
blue twisted 5mmØ x 3. *R9.*

AR3309 .9m
3 x RCA Male to 3 x RCA Male,
RGB colours 6mmØ x 3. *R10.*

AR3318 1.8m
3 x RCA Male to 3 x RCA Male,
RGB colours 6mmØ x 3. *R13.*

AR3330 3.0m
3 x RCA Male to 3 x RCA Male,
RGB colours 6mmØ x 3. *R19.*

AR3350 5.0m
3 x RCA Male to 3 x RCA Male,
RGB colours 6mmØ x 3. *R29.*

AR4209 .9m *High Quality*
2 x RCA Male to 3 x RCA Male,
Blue 6mmØ x 2. *R14.*

AR4218 1.8m *High Quality*
2 x RCA Male to 3 x RCA Male,
Blue 6mmØ x 2. *R17.*

AR4230 3.0m *High Quality*
2 x RCA Male to 3 x RCA Male,
Blue 6mmØ x 2. *R19.6*

AR4309 .9m *High Quality*
3 x RCA Male to 3 x RCA Male,
Blue 6mmØ x 3. *R21.5*

AR4318 1.8m *High Quality*
3 x RCA Male to 3 x RCA Male,
Blue 6mmØ x 3. *R24.*

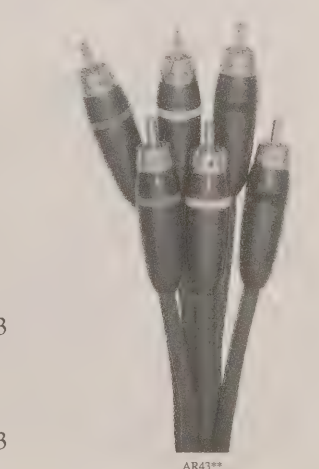
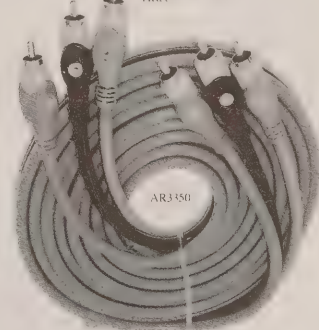
AR4330 3.m *High Quality*
3 x RCA Male to 3 x RCA Male,
Blue 6mmØ x 3. *R28.5*

AR4350 5.m *High Quality*
3 x RCA Male to 3 x RCA Male,
Blue 6mmØ x 3. *R34.5*

AR4310 10.m *HighQuality* 3
x RCA Male to 3 x RCA Male,
Blue 6mmØ x 3. *R52.*

AR4315 15.m *HighQuality* 3
x RCA Male to 3 x RCA Male,
Blue 6mmØ x 3. *R66.*

AUDIO & VIDEO LEADS



SOLDERED
TERMINALS HEAT
SHRINK INSULATED.

AV LEADS & SWITCHES

SCART Leads and Adapters

SRC101 SCART to RCA and SVHS adapter with In/Out switch. Use in either configuration. *R12.*

VS1084 1.8m S-VHS Video lead, 4 pin MINI DIN male to male black. *R5.52*

VS1094 15m S-VHS Video lead, 4 pin MINI DIN male to male black. *R27.*

VS2002 1.5m SCART male to SCART male, 21 pins. *R9.9*

VS2012 High quality 15m SCART male to SCART male, all 21 pins connect. *R48.*

VS2010 SCART divider. Male plug to 2 x Female sockets. All 21 pins interconnect. *R18.2*

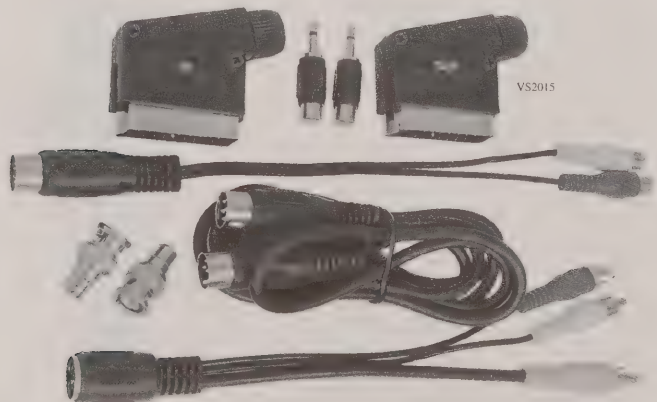
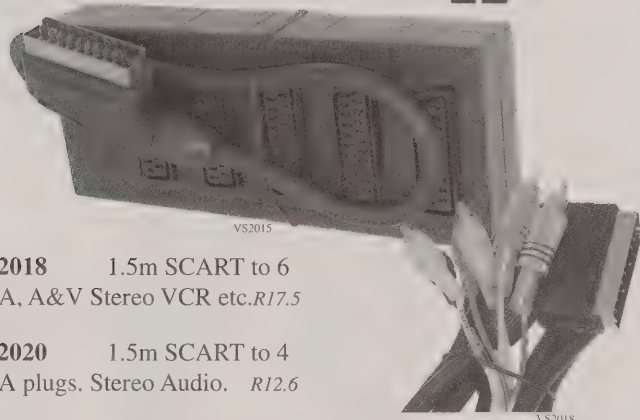
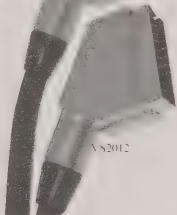
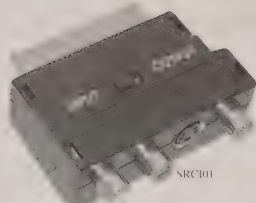
VS2015 SCART divider. Male plug to 5 x Female sockets in parallel. All 21 pins interconnect. *R19.6*

VS2018 1.5m SCART to 6 RCA, A&V Stereo VCR etc. *R17.5*

VS2020 1.5m SCART to 4 RCA plugs. Stereo Audio. *R12.6*

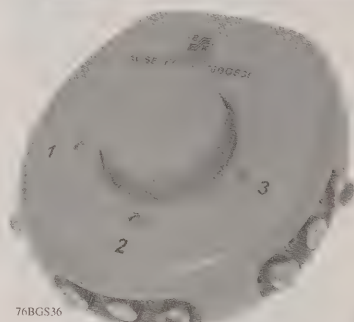
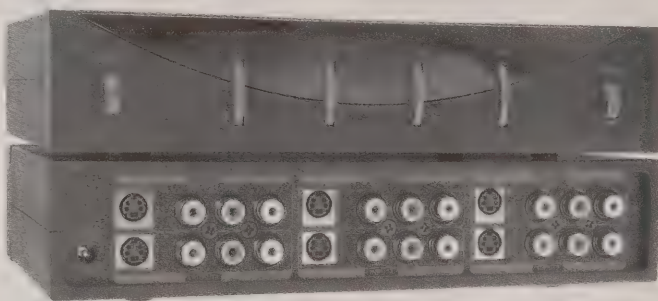
VS2021 1.5m SCART to 4 RCA plugs. Mono VCR Audio&Video to TV etc. *R12.6*

VS2KIT Video Survival dubbing kit. Many Audio Video connections possible, in zip top plastic satchel with hangcell. *R19.5*



AV Selectors, Automatic and Manual

AV42GS 4 in 2 out AV switch with Composite and S-VHS options. Learns the IR Power codes for each device so that as they are turned on, they are automatically selected! Makes switching from Pay TV to DVD, Digital TV or Satellite TV as simple as remote control powering up a device! Manual input selection is also provided. *R128.*



76BGS36 RCA AV switch. 3 inputs to 1 output, RCA L & R Audio and Video. Blister packed. *R17.*

AV1100 SCART AV switch. 3 inputs to 1 output, L & R Audio and Video RCA outputs. SCART interconnect options. Blister packed with printed card. *R27.*



Cable Tidy Kit

CABLETIDY Neatly and easily binds bundles of cables up to 16mm Ø together. Each Cable Tidy Kit includes a 3m length of *Flexi Cord* and an *Easy Clip* applicator, which makes installation as simple as doing up a zip. Colour carton includes clear instructions and before and after pictures. *R12.*



Coaxial Cables 75 Ohm RF

Aerial Industries coaxial cable is now RF Enhanced with improved shielding. Meter Marked, it ships in 305m centre pull cartons, 305m and 100m reels and 30m coils!

RG59 DualShield

.81mm Copper Clad Steel centre, Foam P.E. Dielectric, NON-bonded Aluminium Foil, 37% braid and Jacket.

- RG59/30B** RG59 DualS. 30m coil, Black colour. R24.
RG59/100B RG59 DualS. 100m plastic spool, Black. R50.
RG59/305B RG59 DualS. 305m Reelex box, Black. R148.

RG6 DualShield

1.02mm Copper Clad Steel centre, Foam P.E. Dielectric, NON-bonded Aluminium Foil, 40% Braid and Jacket.

- RG6/30B** RG6 DualS. 30m coil, Black colour. R30.
RG6/100B RG6 DualS. 100m plastic spool, Black. R66.
RG6/100W RG6 DualS. 100m plastic spool, WHITE R66.
RG6/305B RG6 DualS. 305m Reelex box, Black. R198.
RG6/305B/SPOOL RG6 DualS. 305m plac.spool, Black. R198.

RG6 TriShield

1.02mm Copper Clad Steel centre, Foam P.E. Dielectric, bonded Aluminium Foil, 60% Braid, Foil and Jacket.

- RG6T/305B** RG6 TriS. 305m plastic spools, Black. R218.

RG6 QuadShield

1.02mm CCS centre, Foam P.E. Dielectric, bonded Aluminium Foil, 60% braid, Foil, 40% braid and Jacket.

- RG6Q/30B** QuadShield RG6 in 30m coils, Black. R40.
RG6Q/100B QuadShield RG6 on 100m spools, Black. R91.
RG6Q/305B QuadShield RG6 on 305m spools, Black. R266.
RG6QF/305B QuadS. Flooded 305m spools, Black. R276.
RG6 Quadshield SIAMESE - 2 x RG6Quad attached
RG6Q/150BSIAM QuadShield RG6 150m spools, Black. R266.

RG11 QuadShield

1.63mm CCS centre, Foam P.E. Dielectric, bonded Aluminium Foil, 60% braid, Foil, 40% braid and Jacket.

- RG11Q/305B** QuadShield RG11 305m spools, Black. R498.
RG11QF/305B QuadS. Flooded 305m spools, Black. R498.

TechTip. flooding compound protects against moisture ingress by 'self healing' small areas of jacket damage.



American Coax including CATV Hardline Available from Stock

TechTip. need coax for longer baseband Video and Audio runs? RG6 and RG59 TV coax does a surprising job. Crimp and Compression RCA and BNC connectors finish the job nicely.

Ribbon Cable 300 Ohm RF

TV antenna feeder wire on 100m plastic spools. Use with BT1 set balun (cat104 p.28) for PAL type 75Ω set connection.

- TVR300** Copper 7x.12mmx2, Black jacket 2x9.5mm. R23.

CAT5E Data Cable

AI brand, blue jacket in 305m Reelex self dispensing cartons.

- CAT5E305** Twisted pair copper, 4 x .5mm x 2. R178.

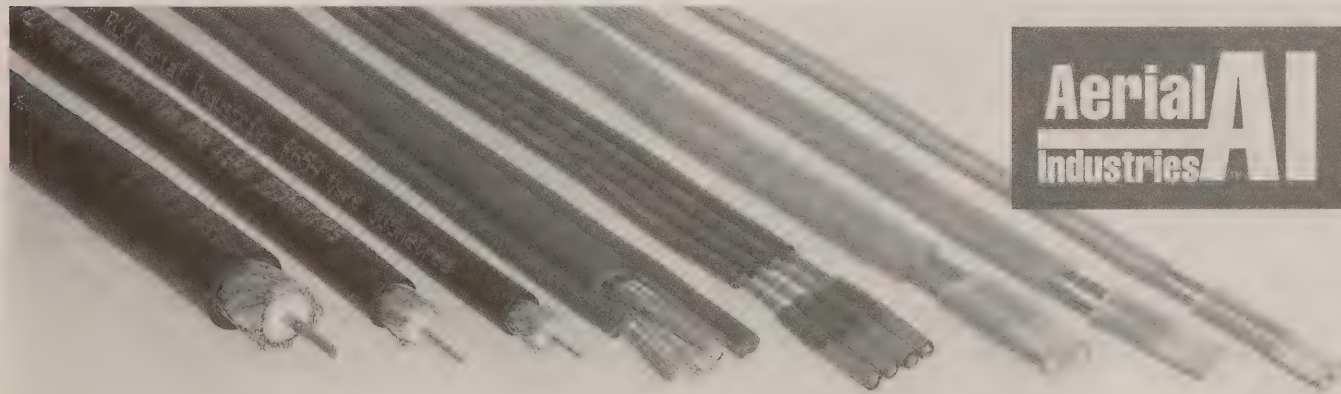
Audio Video Base Band Coaxial Cable

All copper Siamese Video and Stereo Audio cable, Blue jacket. **AVC3356** 1x6mm Video & 2x3.5mm Audio coaxes 100m, T138.

Low Voltage Cable

100m spools, suits applications from loudspeakers, security, low voltage lighting to door bells etc. Clear sheath with polarity indicator, OxygenFreeCopper. Ø = outside diameter in mm. #American Wire Gauge. Ω = 100m DC loop resistance. SPK4176 ideal for concealing L&R speaker wires under carpet.

- SPK2038** 19 x .12mm x 2, 1.6x3.2Ø, 24#, 17Ω 100mloop.
SPK2060 30 x .12mm x 2, 1.8x3.6Ø, 22#, 10Ω 100mloop.
SPK2136 68 x .12mm x 2, 2.5x5Ø, 18#, 4.5Ω 100mloop.
SPK2224 16 x 7 x .12mm x 2, 3x6Ø, 16#, 3Ω 100mloop.
SPK2588 42 x 7 x .12mm x 2, 4.2x8.4Ø, 12#, 1.1Ω 100mloop.
SPK4176 88 x .12mm x 4 siamese, 2.8x11Ø.



Cable Tacker

NEW Cable Tacking system that blends the best of cable clips with the speed of staples.

JY667 Cable Tacker for up to 7mmØ round and 10mm wide flat cables. Patented staple shape suits round or flat cable types. 2 staple sizes 1407R for RG6 and 1405R for RG59 etc. 100 White x 1407R staples included with each tool. Blister packed.

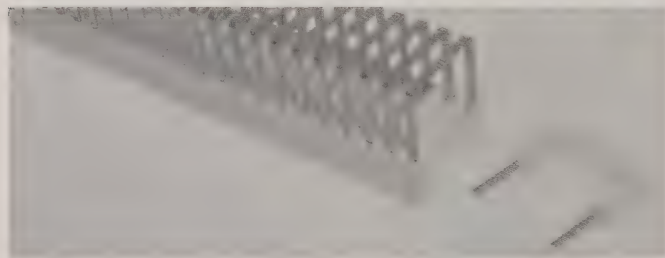


1405RW 200 x blister **White** cable staples. For 4 to 6mmØ round and 2.5 to 4mm high by up to 8mm wide flat cables. *R9.*

1405RB 200 x blister **Black** cable staples. For 4 to 6mmØ round and 2.5 to 4mm high by up to 8mm wide flat cables. *R9.*

1407RW 200 x blister **White** cable staples. For 6 to 8mmØ round and 4.5 to 6.3mm high by up to 10mm wide flat cables. *R9.*

1407RB 200 x blister **Black** cable staples. For 6 to 8mmØ round and 4.5 to 6.3mm high by up to 10mm wide flat cables. *R9.*



Cable Clips

CC6RB 100 x Cable Clips 6mm round black, RG59&6 Dual. *R8.6*

CC7RB 100 x Cable Clips 7mm round black, RG6Quad etc. *R8.8*

CC10RB 100 x Cable Clips 10mm round black, RG11 etc. *R10.6*



Cable Tapes

NITTO203E 20m x 18mm x

.18mm Plastic Tape. *R1.98*

TechTip. the recommended way to secure TV cable as it does not distort cable shape & introduce signal reflections. Stable against UV rays.



NITTO11 Self Fusing or

Amalgamating Tape.

10m x 19mm x .5mm *R29.*

TechTip. stretch & wrap around connectors etc. to weatherproof. Fuses to itself in response to heat from fingers applying. Lining prevents bonding in storage.



Cable Ties

CT100 100mm x 2.5mm black, bag of 100

R5.4

CT190 190mm x 4.8mm black, bag of 100

R9.4

CT300 280mm x 4.8mm black, bag of 100

R18.4

Cable Ties for securing cables etc. Black colour suitable for outdoor use.

TechTip. leave loose on coaxial cable as cable ties indent coax causing reflected signal!



Flush Mount Speakers

Flush mounting wall speakers for Home Theatre applications. Two way system employs individual bass and treble drivers to provide Quality sound with enhanced bass response.

SW6515

165mm or 6 1/2 inch Ø mylar and foam roll edge surround cone with 80mmØ magnet bass driver, plus a 38mm or 1 1/2 inch tweeter with crossover cap. Cut a 185w x 272mm hole, depth ~75mm. 15watts

@ 8Ω.

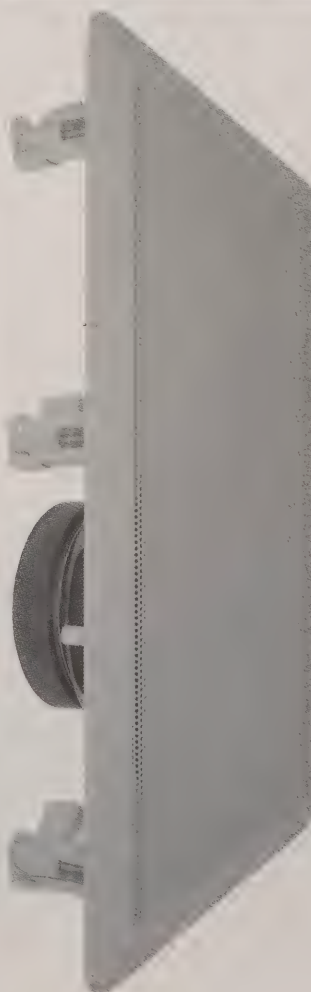
R98.

SW8015

204mm or 8 inch Ø mylar and foam roll edge surround cone with 98mmØ magnet bass driver, plus a 38mm or 1 1/2 inch tweeter with crossover cap. Cut a 218w x 321mm hole, depth ~90mm. 25watts

@ 8Ω.

R124.



Speakers Twin Cone

Clean sound for Home Theatre and P.A.
Column applications. ST65G sounds particularly good thanks to the large baffle area ceilings and walls provide.

ST65 Twin Cone Speaker 165mm or 6½ inch outside diameter with foam roll edge cone surround and lacquer re-inforced cone. Mounting hole centres 158mm. Magnet diameter 68mm, depth 60mm. 10watts @ 8Ω. R16.

ST80 Twin Cone Speaker 204mm or 8 inch outside diameter with foam roll edge cone surround and lacquer re-inforced convex cone. Mounting hole centres 198mm. Magnet diameter 68mm, depth 75mm. 15W @ 8Ω. R18.

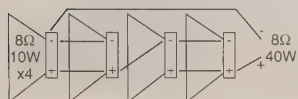
ST65G Twin Cone Speaker 165mm or 6½ inch. ST65 driver screw mounted to grille for flush mount applications including Home Theatre and Public Address. Mounting hole centres 208mm. 10W @ 8Ω. R24.

ST80G Twin Cone Speaker 204mm or 8 inch as ST80 mounted to flush mount grille for Home Theatre and P.A. applications, mounting hole centres 262mm. 15W @ 8Ω. R26.

ST65GTR Twin Cone Speaker 165mm or 6½ inch as ST65G with frame mounted 100V line transformer. Mounting hole centres 208mm. R28.

ST80GTR Twin Cone Speaker 204mm or 8 inch as ST80G with frame mounted 100V line transformer. Mounting hole centres 262mm. R32.

TechTip. numbers of speakers can be connected in Series Parallel Combination to handle higher power levels, whilst avoiding the loss of sound quality 100V line transformers introduce. For example, 4 groups of 4 (16 x 10 W) connected in the same Series Parallel manner still provides an 8Ω amplifier load but with 160W capacity.



LOUDSPEAKERS, AV REPEATER & UNIVERSAL REMOTE Audio Video & IR 2.4GHz Radio Link

Complete 2.4GHz AV transceiver kit with 433.9MHz IR Remote Control return path. Extends the reach of a PayTV receiver, camera, DVD, etc. Composite or S-VHS connections. Indoor range usually exceeds 25 metres and will go further with a line of sight signal path. 4 channels can eliminate interference. Complete with power supplies, AV cables and instruction book.

TR-2470 AV 2.4Ghz Transceiver with 433.9MHz IR. R240.

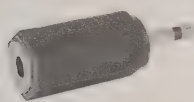
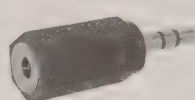
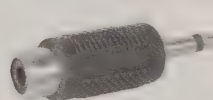
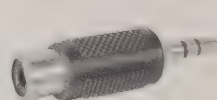
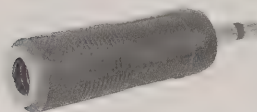
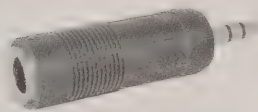
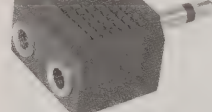
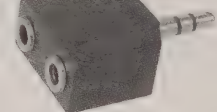
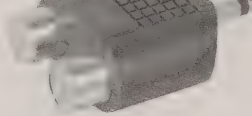
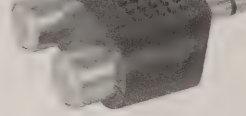
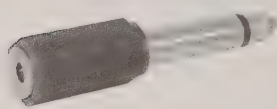
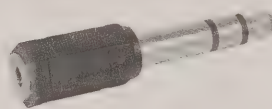
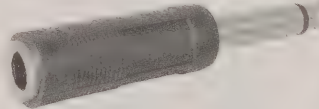
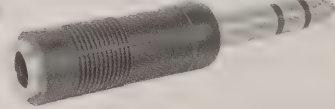
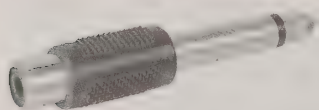
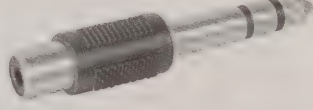
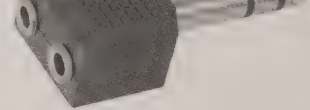
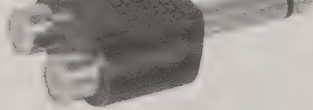
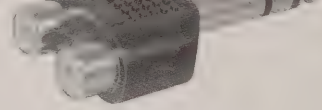


Universal & Replacement Remote Control

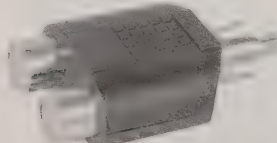
4 in 1 Universal Remote Control. New shape and button layout with menu functions. Hundreds of codes cover thousands of brands and models. Easy to use Search, or use the code book included. Detailed instructions printed on back of display card. Resealable blister pack permits trying before buying! 200mm long.

HUR421S or B
Infra Red Universal Remote Control TV, VCR, SAT & AUX. Available in Silver or Black. 2 x AAA batteries required. R26.



AA2501 R2.2.5mm Male MONO -
2.5mm Female STEREO**AA2502 R2.**2.5mm Male STEREO -
2.5mm Female MONO**AA2503 R2.**2.5mm Male MONO -
3.5mm Female MONO**AA2504 R2.**2.5mm Male STEREO -
3.5mm Female STEREO**AA3501 R2.**3.5mm Male MONO -
3.5mm Female STEREO**AA3502 R2.**3.5mm Male STEREO -
3.5mm Female MONO**AA3503 R2.**3.5mm Male MONO -
RCA Female**AA3504 R2.**3.5mm Male STEREO -
RCA Female**AA3505 R2.**3.5mm Male MONO -
6.35mm Female MONO**AA3506 R2.**3.5mm Male STEREO -
6.35mm Female STEREO**AA3507 R2.**3.5mm Male MONO -
2 x 3.5mm Female MONO**AA3508 R2.**3.5mm Male STEREO -
2 x 3.5mm Female STEREO**AA3509 R2.**3.5mm Male MONO -
2 x 6.35mm Female MONO**AA3510 R2.**3.5mm Male STEREO -
2 x 6.35mm Female STEREO**AA3511 R2.**3.5mm Male MONO -
2 x RCA Female**AA3512 R2.**3.5mm Male STEREO -
2 x RCA Female**AA6301 R2.**6.35mm Male MONO -
3.5mm Female MONO**AA6302 R2.**6.35mm Male STEREO -
3.5mm Female STEREO**AA6303 R2.**6.35mm Male MONO -
6.35mm Female STEREO**AA6304 R2.**6.35mm Male STEREO -
6.35mm Female MONO**AA6305 R2.**6.35mm Male MONO -
RCA Female**AA6306 R2.**6.35mm Male STEREO -
RCA Female**AA6307 R2.**6.35mm Male MONO -
2 x 3.5mm Female MONO**AA6308 R2.**6.35mm Male STEREO -
2 x 3.5mm Female STEREO**AA6309 R2.**6.35mm Male MONO -
2 x 6.35mm Male MONO**AA6310 R2.**6.35mm Male STEREO -
2 x 6.35mm Male STEREO**AA6311 R2.**6.35mm Male MONO -
2 x RCA Female**AA6312 R2.**6.35mm Male STEREO -
2 x RCA Female**AARC01 R2.**

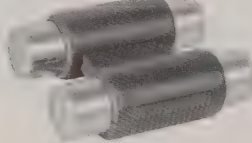
1 x RCA Male - 2 x Female

**AARC02 R2.**

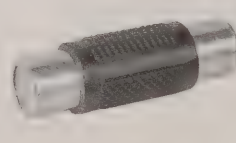
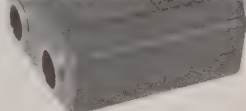
1 - 2 x RCA Female

**AARC03 R2.**

2 - 2 x RCA Female

**AARC04 R2.**

1 - 1 x RCA Female

**AARC05 R2.**1 x RCA Male -
2 x 3.5mm Female MONO**AARC06 R2.**1 x RCA Male -
2 x 6.35mm Female MONO**AARC08 R7.**2 - 2 x RCA Female with
1 - 1 x 2 VHS 4 pin MiniDin**AARC09 R7.**

2 - 3 x RCA Female



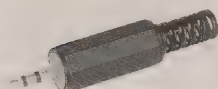
AP2501 R1.5

Phono Plug Male MONO
2.5mmØ, solder type.



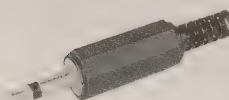
AP2502 R1.5

Phono Plug Male STEREO
2.5mmØ, solder type.



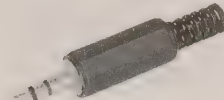
AP3501 R1.2

Phono Plug Male MONO
3.5mmØ, solder type.



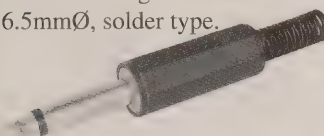
AP3502 R1.5

Phono Plug Male STEREO
3.5mmØ, solder type.



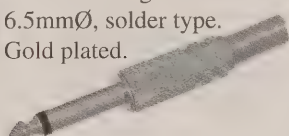
AP6301 R2.

Phono Plug Male MONO
6.5mmØ, solder type.



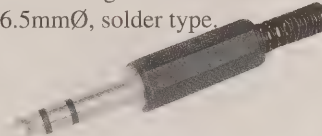
AP6303 R2.5

Phono Plug Male MONO
6.5mmØ, solder type.
Gold plated.



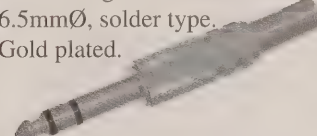
AP6302 R2.

Phono Plug Male STEREO
6.5mmØ, solder type.



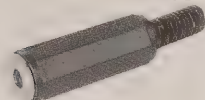
AP6304 R2.5

Phono Plug Male STEREO
6.5mmØ, solder type.
Gold plated.



AJ3501 R1.5

Phono Jack Female STEREO
3.5mmØ, solder type.



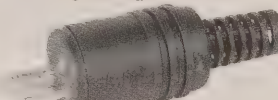
BP01 R.1

Banana Plug, solderless,
Black or Red 'piggy-back'



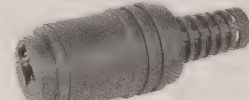
CDIN2M R1.2

2 pin Male DIN screw, low
voltage & speaker uses



CDIN2F R1.2

2 pin Female DIN screw, low
voltage & speaker uses



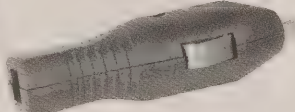
CLA182 R2.

Lighter plug assembly 1.8m
with standard L.V. connector



CLM121 R1.

Car Lighter connector
12-15VDC solder



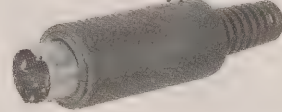
CRCM01 R1.2

Car Radio Antenna
connector Male solder



CSVMD4 R2.2

MiniDin 4 pin Male for SVHS,
solder type.



CXLRFL R4.4

Female XLR Line 3 pin
solder type



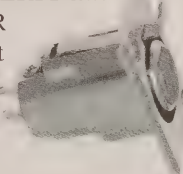
CXLRML R3.9

Male XLR Line 3 pin
solder type



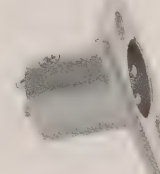
CXLRFP R4.4

Female XLR
Panel Mount
3 pin solder



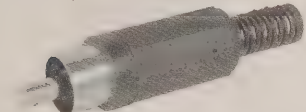
CXLRMP R3.9

Male XLR
Panel Mount
3 pin solder



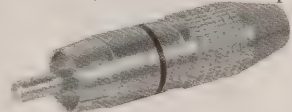
RCAM01 R1.

RCA plug, solder type,
Black, Red or Yellow colours.



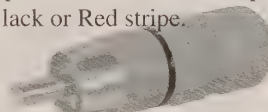
RCAM02 R3.5

RCA plug, shielded, solder
Gold Pl., Black or Red stripe.



RCAM03 R3.2

RCA plug, shielded, solder
type Gold Plated., Blue cap,
Black or Red stripe.



RCAM04 R7.

RCA plug, screw terminal,
large 9mm cable entry, looks
on female, Gold Plated.



RCAM6 R1.98

RCA Male crimp RG6
9.5mmØ



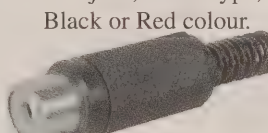
RCAM09 R5.compression

RCA plug RG6Quad
Gold Plated



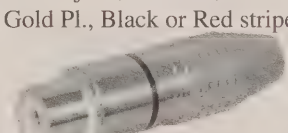
RCAF01 R.98

RCA jack, solder type,
Black or Red colour.



RCAF02 R3.9

RCA jack, shielded, solder
Gold Pl., Black or Red stripe.



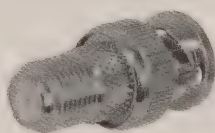
BA7004 R4.

BNC Male to F Male



BA7005 R4.

BNC Male to F Female



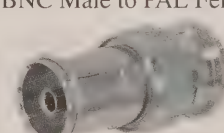
BA7008 R4.

BNC Male to PAL Male



BA7009 R4.

BNC Male to PAL Female



BA7011 R4.

BNC Male to RCA Female



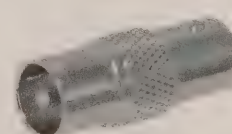
BA7022 R4.

BNC Male to 2 x BNC Female



BA7024 R4.

BNC Female to PAL Male



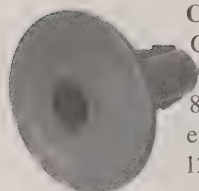
BA7025 R4.

BNC Female to PAL Female



BC7001B R3.BNC Male crimp RG59
.8mmØ centre wire**BC7003 R3.**

BNC Male screw & clamp

**BC7007B R3.**BNC Male twist on RG59
captive pin**BC7007C R3.**BNC Male twist on RG6
captive pin**BC7014 R3.**BNC Female panel mount
solder**BC7015 R3.**BNC Female panel mount
solder**BC7009C R4.**BNC Male hex crimp RG6
11mmØor BC7009B
for RG59 9.5mmØ**BC7029 R5.compression**BNC Male RG6Quad
Gold Plated COMING
SOON!BC7027 RG59
BC7028 RG6Dual**CEF8 R1.**Cable Entry
Flange
8mmØ cable
entry for 10-
12mmØ hole,
31mmØ.**CJ75SC R1.5**

Coax Joiner Screw & Clamp

**CJ59H R2.**Coax Joiner crimp RG59
9.5mmØ**CJ6H R2.**Coax Joiner crimp RG6
Universal
11mmØ**EC7001 R2.**PAL Male crimp RG59
Universal
11mmØ**EC7002 R2.**PAL Female crimp RG59
Universal
11mmØ**EC7003 R1.2**

PAL Male screw & clamp

**EC7004 R1.2**

PAL Female screw & clamp

**EC7005 R1.6**

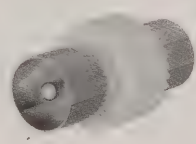
PAL Male recessed philips screw

**EC7006 R1.6**

PAL Female recessed screw

**EC7007 R1.4**PAL Male right angle
easy to fit, fully shielded**EC7008 R1.4**PAL Female right angle
easy to fit, fully shielded**EC7009 R1.9**PAL Male crimp RG6
Universal 11mmØ**EC7010 R1.9**PAL Female crimp RG6
Universal 11mmØ**EC7011 R1.**

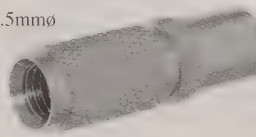
PAL Male to PAL Male

**EC7012 R1.**

PAL Female to PAL Female

**EC7013 R1.**

PAL Male to PAL Female

**EC7014 R2.**RIGHT ANGLE
PAL Male to PAL Female**EC7015 R2.**PAL Male twist on RG6
6.5mmØ**EC7016 R2.4**

PAL Male to F Female

**EC7017 R2.4**

PAL Male to RCA Female

**EC7018 R2.4**

PAL Female to RCA Female

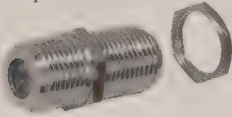
**EC7019 R2.4**

PAL Female to RCA Male

**EC7020 R2.4**PAL Female to 3.5mm Male
MONO**EC7021 R1.8**PAL Male panel mount
crimp and solder type**EC7022 R1.8**PAL Female panel mount
crimp and solder type**EC7024 R3.**

PAL Female panel mount

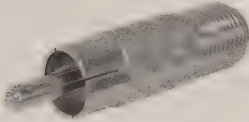
**EC7025 R2.**PAL Female / Female
panel mount

FA7001 R.8F Female to Female
optional locknut**FA7002 R1.8**F Female to Female
tested to 3GHz**FA7004 R2.6**

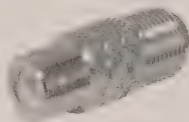
F Male to F Male threaded

**FA7005 R2.6**F Male to F Male *fast* twist on**FA7013 R2.6**

F Female to RCA Male

**FA7015 R2.6**

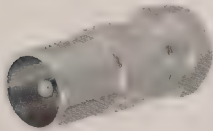
F Female to RCA Female

**FA7016 R2.6**F Male *fast* - RCA Female**FA7017 R2.6**

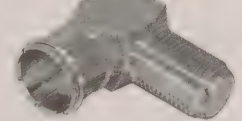
F Male to PAL Female

**FA7018 R2.6**

F Male to PAL Male

**FA7019 R2.6**

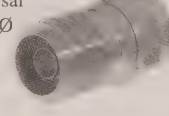
F Female - PAL Female

**FA7022 R2.**F Male Right Angle
to F Female**FA7023 R2.**F Male *fast* Right Angle
to F Female**FA7024 R2.**F Male *fast* to F Female75Ω
Terminators
see page 23**FC7005 R3.2**

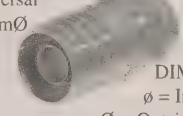
F connector RG11

captive reducing pin
13.5mmØor FC7005L
with loose reducing pin**FC7002B R.8**

F conn. hex crimp RG59

Universal
11mmØ**FC7002C R.8**

F conn. hex crimp RG6

Universal
11mmØDIMENSIONS
ø = Inside Diam.
Ø = Outside Diameter**FC7004C R1.**F conn. O ring and silicone
grease weather seal for RG6pre-crimp
9.5mmØor FC7004B
for RG59 9.5mmØ**FC7006B R.6**

F twist on RG59

cable entry
5.5mmØ**FC7006C R.6**

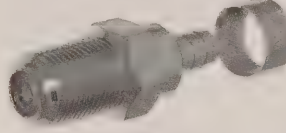
F twist on RG6

cable entry
6.5mmØ**FC7006D R.6**

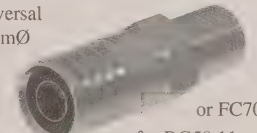
F twist on RG6Quad

cable entry
6.75mmØ**FC7009B R.8**F connector *fast* twist RG59cable entry
5.25mmØ**FC7009C R.8**F connector *fast* twist RG6cable entry
6.25mmØ**FC7010 R.6**

F female RG59

**FC7012 R2.**

F connector Female RG6

Universal
11mmØor FC7011
for RG59 11mmØ**FC7013C R.9**

F connector hex crimp RG6

Universal
11mmØCOMING
SOON!**FC7016C R1.**

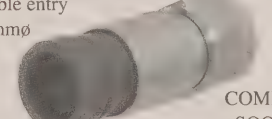
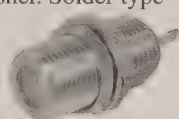
F connector hex crimp RG6

Universal
11mmØCOMING
SOON!**FC7017 R1.4**

F conn. compression RG6

cable entry
8mmØCOMING
SOON!**FC7018 R1.4**

F conn. compression RG6

cable entry
8mmØCOMING
SOON!**FC7019 R1.**F conn. *conical* crimp RG6with grip rings
Universal
9.5mmØCOMING
SOON!
suits
HT507
crimper p.67**FC7024 R1.**F connector bulk head with nut
& washer. Solder type**FCBOOT R 1.**

Weatherproof F connector boot

**FCGB1 R2.**

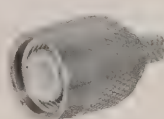
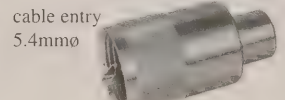
F connector grounding block

**NC7015 R2.6**

N type 50Ω Female

panel
mount.**TC7001 R2.6**

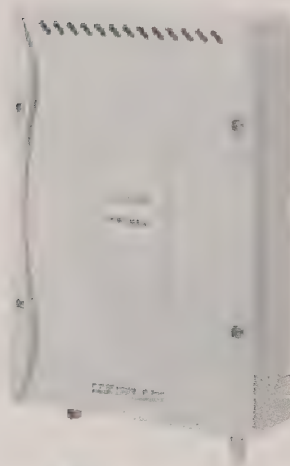
TNC Male RG58 Gold pl. pin

**TC7002 R2.6**TNC Male *fast* RG58
Gold plated captive pin**UC7002A R2.6**UHF/PL259 type, Male
solder, heat resistant!

NEW Fracarro CoaxLAN64 provides fast internet service over existing coax infrastructure. Now existing MATV systems can deliver bi-directional, always on broadband internet at multi-mega-bit speeds.

A Master Access Switch interfaces internet service with the MATV system. Intelligent Outlets permit simultaneous Internet and TV connection. Up to 64 users per MAS share 36Mbps with 10Mbps bitrate max. at each outlet.

- ° MAS can give DHCP server, NAT, PPPoE, RIP, DNS, DNS Proxy and configurable Firewall, with outlet security.
- ° VLAN configurable between outlets.
- ° Each NWL-10 supports up to 16 different IP addresses.
- ° Firmware upgradeable remotely for MAS and IO.
- ° Manage and monitor outlets by SNMP.



NWL-MAS
Master Access Switch
Downstream 40-80MHz
tunable, Upstream 5-32MHz.

NETWORK LINE



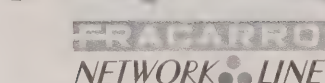
NWL-MAS/A
Master Access Switch
Downstream 118-860MHz
tunable, Upstream 5-32MHz.

Intelligent Outlets:
NWL-10/USB
40-80MHz USB

NWL-A10/USB
118-860MHz USB

NWL-10/ETH
40-80MHz Ethernet

NWL-A10/ETH
118-860MHz Ethernet



Ask for colour brochure for more details.

TechTip. CoaxLAN 64 costs can be minimised by fitting 1 Master Access Switch and dispensing Intelligent Outlets to guests from

Power Supplies and Accessories

PI-8AL Injector only with LED, use with any Low Voltage power supply. PAL type connectors. R9.

PS9VDC200 PI 9V DC 200mA supply. Suits many 12V DC applications up to 100mA, moulded 3.5mm DC plug tip +. R14.

PS12DCP PI 12V DC 150mA supply, injector with Green LED indicator, Short Circ. Protected, PAL connectors. R30.

PS15DCP PI 15V DC 150mA supply, injector with Green LED indicator, Short Circ. Protected, PAL connectors. R30.

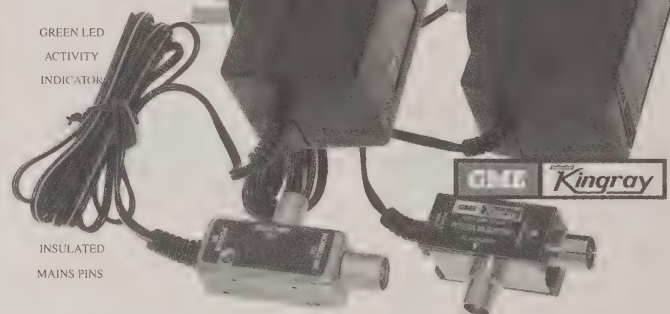
PS22ACP PI 22V AC 100mA supply, injector with Green LED indicator, Short Circ. Protected, PAL connectors. R28.

PS22ACF PI 22V AC 100mA supply, injector with Green LED indicator, Short Circ. Protected, F connectors. R30.

PS24DCP PI 24V DC 100mA supply, injector with Green LED indicator, Short Circ. Protected, PAL connectors. R30.



GREEN LED
ACTIVITY
INDICATOR



PSK01 GME 12V DC 100mA supply with injector, Short Circuit Protected, PAL male to female connectors. R32.

PSK02 GME 22V AC 100mA supply with injector, Short Circuit Protected, PAL male to female connectors. R32.

PSK06 GME 14V DC 150mA supply with injector, Short Circuit Protected, PAL male to female connectors. R34.

PSK06F GME 14V DC 150mA supply with injector, Short Circuit Protected, F female connectors. R34.

PSK08 GME 17.5V AC 100mA supply with injector, Short Circuit Protected, PAL male to female connectors. R28.

PSK08F GME 17.5V AC 100mA supply with injector, Short Circuit Protected, F female connectors. R28.

MH21D GME 22VAC or 17.5VAC 100mA supply, integrated 2 way splitter, Screw & Saddle, SCP. R78.

PSK18S GME 18V DC 500mA supply, Heavy Duty with 5.5mm DC plug c+. Required for DW42, MD100 etc. R40.

PSK18F GME 18V DC 500mA supply, Heavy Duty fitted with F type female - female RF injector. R40.

PSK18KR GME 15V DC 1700mA supply Heavy Duty, fitted with 5.5mm DC plug c+. R90.

FBLKDC Block power through paths with ease, suitable for AC or DC. Insertion loss <1dB. R6.

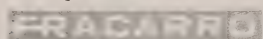
PI2G Inserts (or removes) power from coax feed line. 5-2,400MHz, low loss, F type female connectors for both RF and low voltage connections. R16.

PPCOIL Pass DC and low freq. AC, block RF. Power injection and removal device. 12mm ferrite former, wires 9mm apart. R96.

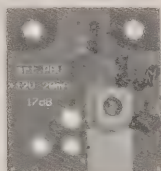


Balun Preamplifiers

fit inside the antenna - right on the dipole, amplifying every microvolt the antenna develops. As the magic is done between the antenna and the first chip, the output can then be further amplified with less noticeable loss of quality.



DA4/0 DA5 band 4/5 and band 5 dipoles, pre-assembled with PBU pre-amplifier, see p. 10. +17dB 470-860MHz 1.7dBnf, 12V DC @ 20mA. Fits Fracarro antennas from the PU and BLU to the new Delta series. *R44.*



BR-103 As BR-105, 24V DC *R38.*

BR-105 Fits Alcad AP-369 +14dB 470-860MHz. 1.5dB noise, 12V DC *R38.*



Single Channel Mast Amplifiers

Mast amplifiers that amplify one TV channel only. Eliminates interfering signals, enables better MATV results from weak signals. Specify channel with your order.

ATB/.. +30dB on specified UHF channel, 4dB noise, 12V DC@7mA. ATB/AU30 available from stock.

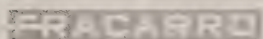
BROWN TERMINAL: OUTPUT & POWER SUPPLY

R139.

AT2/.. +30dB on specified VHF channel, 4dB noise, 12V DC@7mA. Australian B.3 channels generally ex stock.

BROWN TERMINAL: OUTPUT & POWER SUPPLY

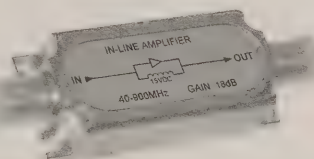
R119.



In Line Amplifiers, Fixed Gain

Handy for beating long cable runs. Out to In Power Pass! FBLKDC required to stop antenna shorting supply.

LA1-18F +18dB VHF/UHF 40-900MHz fixed gain low cost TV line amplifier. 103dB μ V max. out, nf <5dB typ. F connectors. 12V DC @<50mA. use with PS12DCP supply or CA215 amplifier etc. *R34.*



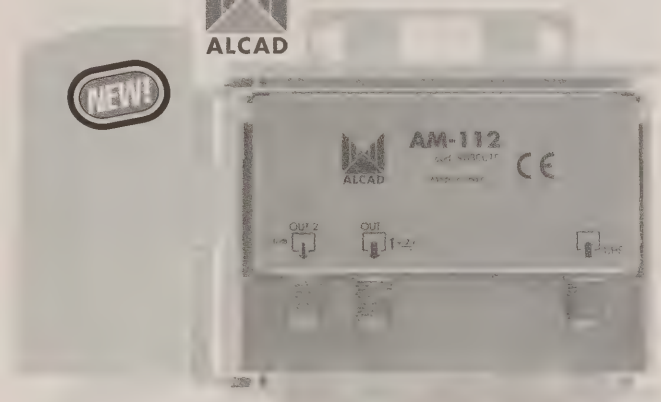
LA2-20 +18dB Satellite I.F. 950-2150MHz Line amplifier. 110dB μ V max. out, nf <7dB. 14/18V @ 40mA. Passes 500mA max. *R28.*



MAST AMPLIFIERS

Alcad low noise gain regulated mast amplifiers are 100% shielded with easy control access, with quality F connectors. The weatherproof ABS housing has an improved lock mechanism. Test points permit in circuit testing and can double as additional reduced level outputs. Choose Alcad for performance, flexibility and accessibility. Maximum output a healthy 108dB μ V on 2 equal channels.

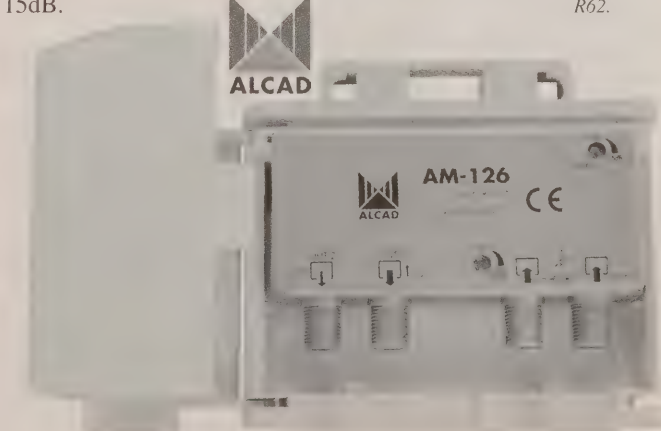
AM-112 1 input: UHF +24dB (470-862MHz). Gain fixed. n/f 2.5dB. 12V DC @45mA. Test Point out -10dB. *R50.*



AM-115 1 combined U/V input: UHF +36dB, VHF B1&B3 +30dB, B2 FM rejected. Gain controls: UHF -16dB midstage, VHF -22dB. n/f 2.5dB UHF, 5dB VHF. 12V DC @45mA. Test Point out -15dB. Switchable 12V 50mA power to input. *R60.*

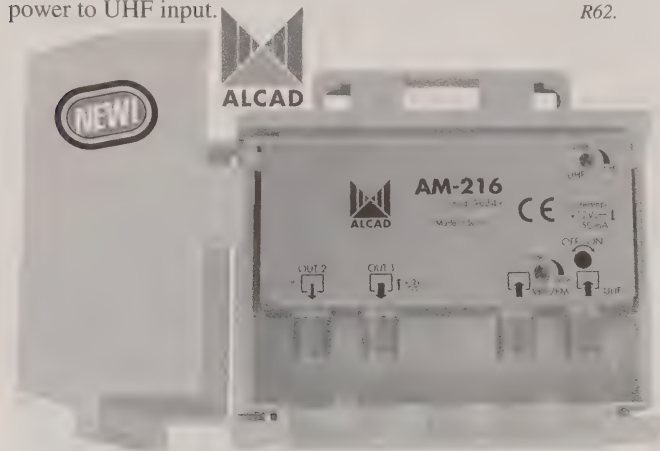


AM-126 2 inputs for Combined or cut link for Separate U/V inputs: UHF +36dB, VHF B1&B3 +24dB, B2 FM +14dB (Ch.5A+22dB). Gain controls: UHF -16dB midstage, VHF -24dB. n/f <3dB. 22V AC or 24V DC@45mA. Test Point out -15dB. *R62.*



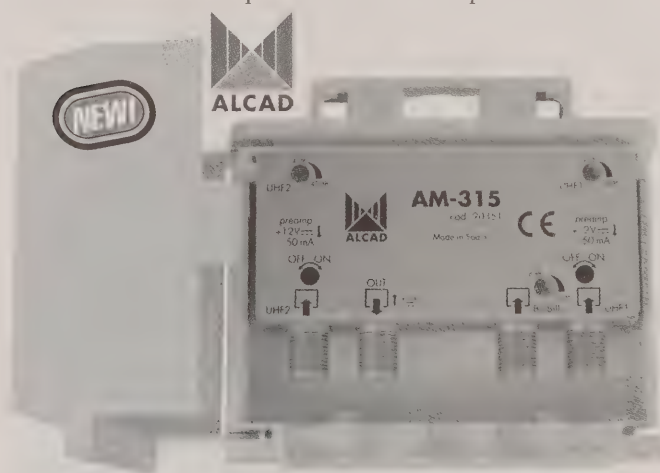
AM-215 Like AM 216 with ≥ 30 dB FM rejection filter. *R59.*

AM-216 2 separate UHF VHF inputs: UHF +36dB, VHF B1&B3 +24dB, B2 FM +14dB (5A+22dB). Gain controls: UHF -16dB midstage, VHF -24dB. n/f 2.5dB UHF, 4.5dB VHF. 12V DC @ 45mA. Test Point out -15dB. Switchable 12V 50mA power to UHF input. *R62.*

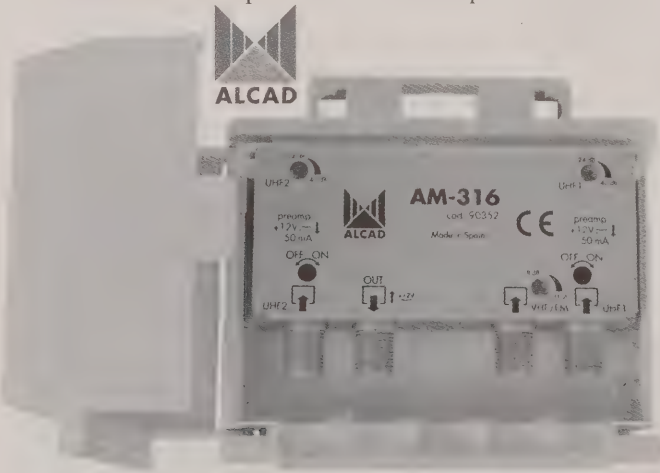


AM-217 Like AM216 with no FM rejection filter. UHF +36dB, VHF +18dB. Full TV and FM pass. *R62.*

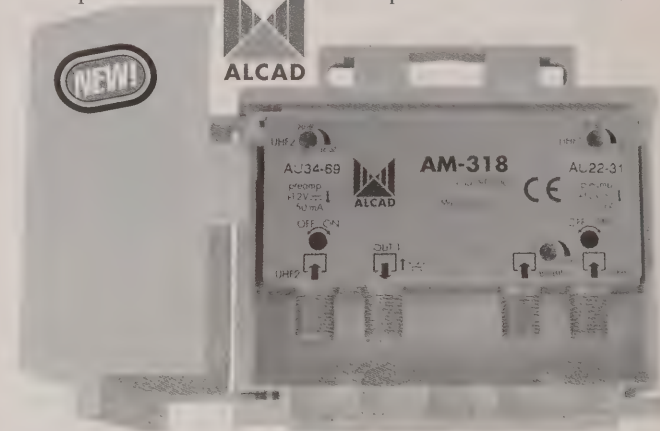
AM-315 3 inputs: UHF 1 +40dB, UHF 2 +40dB, B1&B3 +30dB, B2 FM rejected. Gain controls: UHF 1&2 -16dB mid stage, VHF -22dB. n/f 5dB UHF, 4dB VHF. 12V DC @45mA. Switchable 12V 50mA power to each UHF input. *R102.*



AM-316 3 inputs: UHF 1 +40dB, UHF 2 +40dB, B1&B3 +30dB, B2 FM +20dB. Gain controls: UHF 1&2 -16dB mid stage, VHF -22dB. n/f 5dB UHF, 4dB VHF. 12V DC @45mA. Switchable 12V 50mA power to each UHF input. *R102.*



AM-318.31/34 3 inputs: UHF 1 +38dB Australian Ch 20-31, UHF 2 +38dB Au Ch 34-75, B1&B3 +30dB, B2 FM rejected. Gain controls: UHF 1&2 -16dB mid stage, VHF -20dB. n/f <3dB UHF, <4dB VHF. 12V DC @45mA. Switchable 12V 50mA power to each UHF input. *R106.*

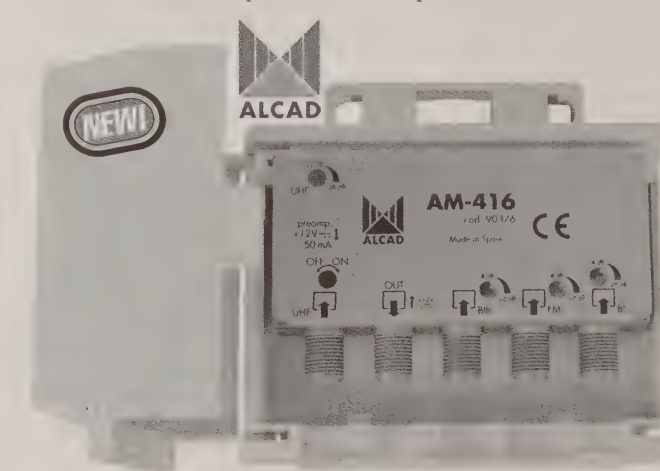


AM-318.37/40 Like AM318.31/34 with UHF 1 for Au Ch 20-37, UHF 2 Au Ch 40-75. *R106.*

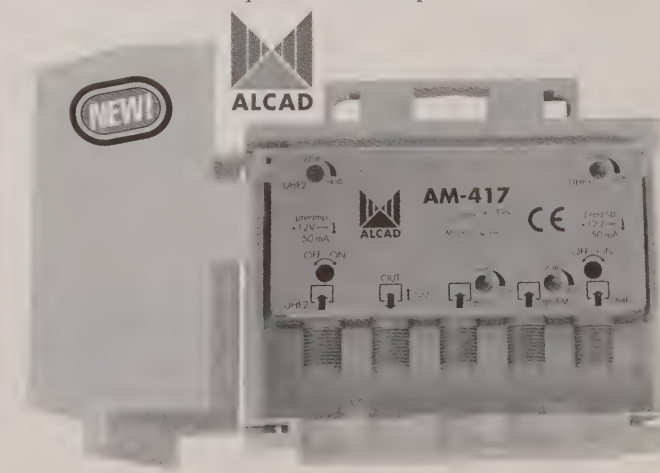
AM-318.48/52 AM-366 may ship! Like AM318.31/34 with UHF 1 for Au Ch 20-48, UHF 2 Au Ch 52-75. *R106.*

AM-319.31/34 Like AM318.31/34 with B2 FM +20dB gain. UHF 1 for Au Ch 20-31, UHF 2 Au Ch 34-75. *R106.*

AM-416 4 inputs: UHF +38dB, B3 +26dB, B2 +26dB, B1 +26dB. Gain controls: UHF -16dB mid stage, B3, B2, B1 -22dB. 12V DC @45mA. n/f 2.5dB UHF, 5.5dB VHF. Switchable 12V 50mA power to UHF input. *R118.*



AM-417 4 inputs: UHF 1 & 2 +38dB, B3 +26dB, B2 & B1 +26dB. Gain controls: UHF 1 & 2 -16dB mid stage, B3, B2 & B1 -22dB. 12V DC @45mA. n/f 5.5dB UHF, 5dB VHF. Switchable 12V 50mA power to UHF input. *R118.*



ES1/5MZS 2 inputs: B5 (AuCh.38-75) +11dB, B1,2,3&4 (Ch.0-32) coupled @ -.5dB. 12V DC@25mA. R58.

ES1/RVU 2 inputs: V&U, +12dB (adj. to +4dB), V & U gain controls. 12V DC@27mA. Max 108dBµV. R52.



EM2/L3U 3 inputs: B1&2 +27dB, B3 +28dB, UHF +22dB, 12 VDC@55mA. 12V DC output! Max 108dBµV. R84.

EM2/L3UU 4 inputs: B1&2 +26dB, B3 +26dB, UHF1 +26dB, UHF2 +26dB, 12V DC@50mA. Max 108dBµV. R98.

JS2/RT 1 input: VHF&UHF. +22dB 1 x -15dB gain control. 110dBµV out. F connectors. 12V DC@60mA. R52.

JK6RP45 3 inputs: B1 +21dB & B3 +19dB; B4 Au Ch 20 to 35 +29dB; B5 Au Ch 39 to 75 +31dB. 3 x -20dB constant 75Ω gain controls, F conn., 12V DC@75mA. R152.

JK6RP45S 3 inputs: B1 +21dB & B3 +19dB; B4 Au Ch 20 to 33 +29dB; B5 Au Ch 37 to 75 +31dB. 3 x -20dB constant 75Ω gain controls, F conn., 12V DC@75mA. R152.

Isolation between bands >30dB, multi-turn attenuators preserve performance at reduced gain levels. Max. out

105dBµV B1, 108dBµV B3, 112dBµV UHF. B2

FM rejected by ≥30dB. Noise figure ≤5dB. 12V DC power passable to any input!



NEW Fracarro MAP series mast amplifiers. Brilliant amplifier technology in weatherproof housings. Features include captive lid and tilting amp mechanism for easy connector fitting. F type connectors, fully screened.

MAP105 R58.

1 x input:

UHF +33dB

1 x -15dB gain control.

108dBµV output.

12V DC@85mA.

MAP206 R66.

2 inputs:

VHF +35dB,

UHF +36dB,

2 x -15dB gain controls.

108dBµV output.

12V DC@75mA.

MAP315 R78.

3 inputs:

VHF +34dB,

UHF +40dB,

UHF +40dB,

3 x -15dB gain controls.

108dBµV output.

12V DC@95mA.

MAP300 R102.

3 inputs:

VHF +34dB,

UHF +40dB,

UHF +40dB,

3 x -15dB gain controls.

108dBµV output.

24V DC@95mA.

MAP402 R124.

4 inputs:

VHF +34dB,

B4 +41dB,

B5 +41dB,

UHF +42dB,

4 x -15dB gain controls.

108dBµV output.

24V DC@90mA.

MAP213I R64.

2 inputs:

VHF +24dB,

UHF +33dB,

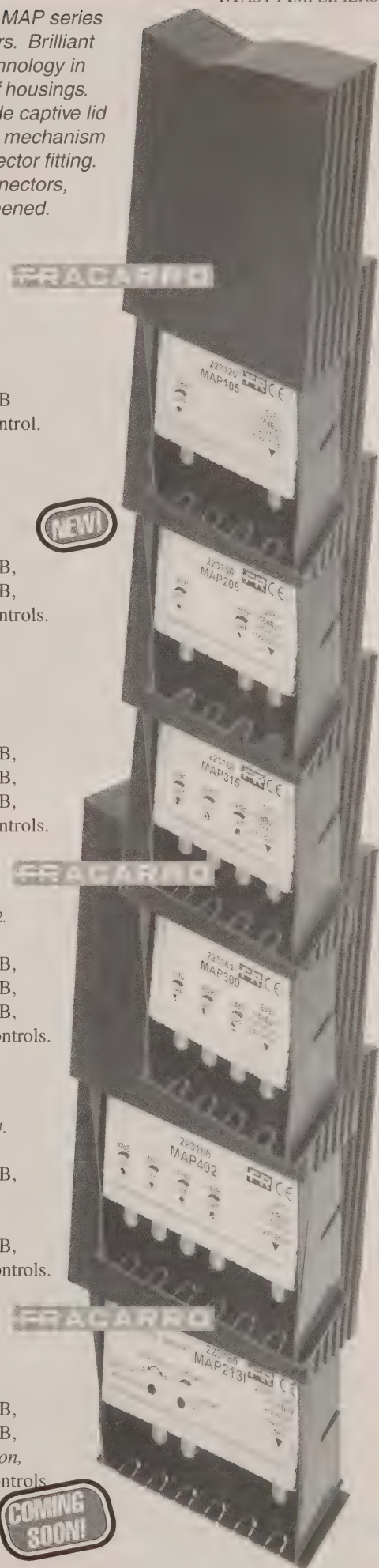
Combi. input option,

2 x -15dB gain controls

107dBµV output.

22VAC@65mA

or 12 to 24V DC.



COMING SOON!

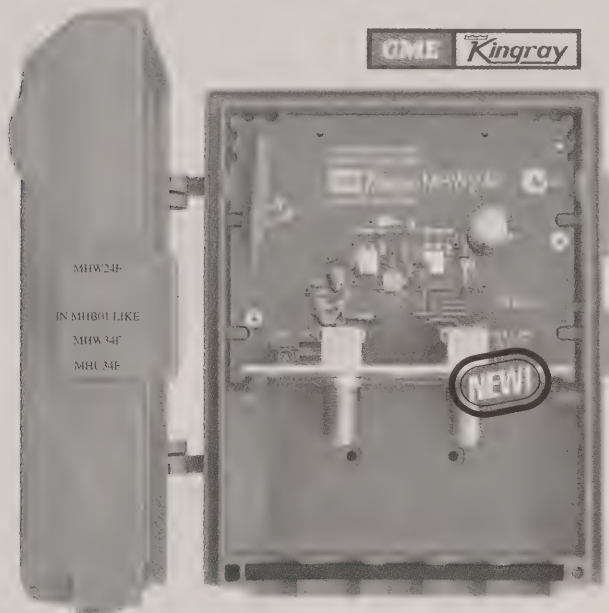
MAST AMPLIFIERS

GME Kingray mast amplifiers are Australian made and available in your choice of F type shielded, F type unshielded or Screw & Clamp terminals. Heads shown, some available bundled with Power Supplies, P suffix.

Wideband Masthead Amplifiers

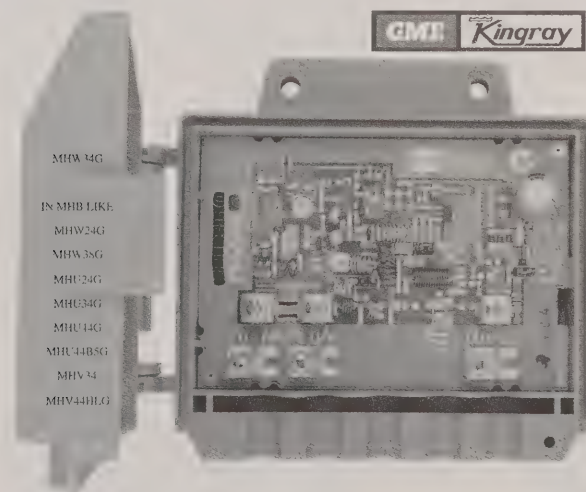
MHW24G Screw & Clamp Unshielded 1 input: +24dB UHF, +18dB VHF, V Low tilt 4-18dB. 17.5V AC@60mA PSK08 R52.

MHW24F F connector Unshielded 1 input: +24dB UHF & VHF, -10dB gain control. 17.5V AC@60mA PSK08 R56.



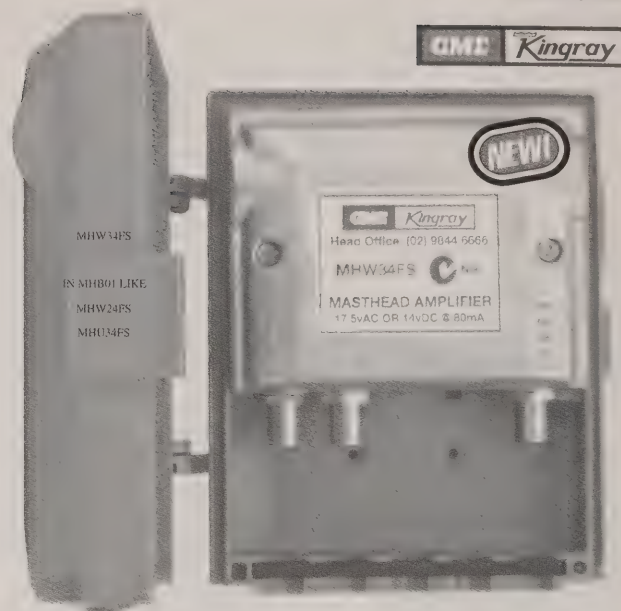
MHW24FS F connector Shielded 1 input: +24dB UHF & VHF, -10dB gain control. 17.5V AC@60mA PSK08 R80.

MHW34G Screw & Clamp Unshielded 2 inputs Combi or Sep.: +34dB UHF, +27dB VHF, ea var. -10dB. FM trap option, 148MHz pager filter. 17.5V/22V AC@85mA PSK08. R81.



MHW34F F connector Unshielded 2 inputs Combi or Sep. +34dB UHF, +27dB VHF, each variable by -10dB. FM trap option, 148MHz pager filter. 17.5V/22V AC@85mA PSK08.R81.

MHW34FS F connector Shielded 2 inputs Combi or Separate. +34dB UHF, +27dB VHF, each variable by -10dB. FM trap option, 148MHz pager filter. 17.5V/22V AC@85mA PSK08.R98.
MHW34GIL Screw & Clamp Unshielded In Line MHW34G for use with a 2nd mast amplifier 17.5V@300mA PSK09. R78.



MHW38G Screw & Clamp Unshielded 2 inputs Combi. or Sep.: +32-38dB UHF, +20-28dB VHF, each variable by -10dB. FM trap, Pager filter freq.adj., 17.5V AC@100mA PSK08.R98.

UHF Masthead Amplifiers

MHU24G Screw & Clamp Unshielded 2 inputs: +24dB UHF var. -10dB, -1dB VHF. 17.5V AC@60mA PSK08 R52.

MHU34G Screw & Clamp Unshielded 2 inputs for Combi. or Sep. antennas: +34dB UHF var.-10dB, -1dB VHF. Power Through option, 17.5V or 22V AC@85mA PSK08 R77.

MHU34F F connector Unshielded 2 inputs Combined or Separate: +34dB UHF variable -10dB, -1dB VHF. Power pass option, 17.5V AC (or 14V DC) @80mA PSK08. R77.

MHU34FS F connector Shielded 2 inputs Combined or Separate: +34dB UHF variable -10dB, -.5dB VHF. Power pass option, 17.5V AC (or 14V DC) @80mA PSK08. R94.

MHU44G Screw & Clamp Unshielded 2 in's Combi. or Sep. +34 to +44dB UHF, -1dB VHF. 17.5V AC@100mA PSK08.R103.

MHU44B5G Screw & Clamp Unshielded 2 in's Combi. or Sep. +34 - 44dB B5, -1dB VHF&B4, 17.5VAC@100mA PSK08.R109.

VHF Masthead Amplifiers

MHV34 Screw & Clamp Unshielded +38dB VHF -.5dB UHF, 17.5V AC@55mA requires PSK08. 75Ω or 300Ω VHF inp. High gain VHF only amplifier, diplex in UHF. R96.

MHV44HLG Screw & Clamp Unshielded 2 inputs: +44dB B3, +10dB UHF, B1&2 to Au5A Stop or Mix @-.5dB via U/V input. Gain controls VHF -18dB, UHF-10dB. 75 or 300Ω VHF input. 17.5V AC @55mA requires PSK08. High gain B3, low gain UHF & B1 mast amplifier, useful in regional areas. R112.

Masthead Boxes

MHB Weatherproof Masthead Box to fit the Screw & Clamp Kingray mast amplifiers or Trade Filter range. R10.5

MHB01 Weatherproof Masthead Box to fit the Kingray F connector masthead amplifiers, even accepts RG11! R12.

Splitter Amplifiers, Fixed Gain

SA162F 1 input: +16dB VHF, +20dB UHF, -4dB split loss, fixed gain. 2 outputs, 100dB μ V max., nf <4dB typ. **F type female connectors.** Integrated mains supply. *R60.*

SA162P 1 input: +16dB VHF, +20dB UHF, -4dB split loss, fixed gain. 2 outputs, 100dB μ V max., nf <4dB typ. **PAL female connectors.** Integrated mains supply. *R60.*

TechTip. install in ventilated places where extreme temperatures won't shorten product life.



Splitter Amplifiers, Variable Gain

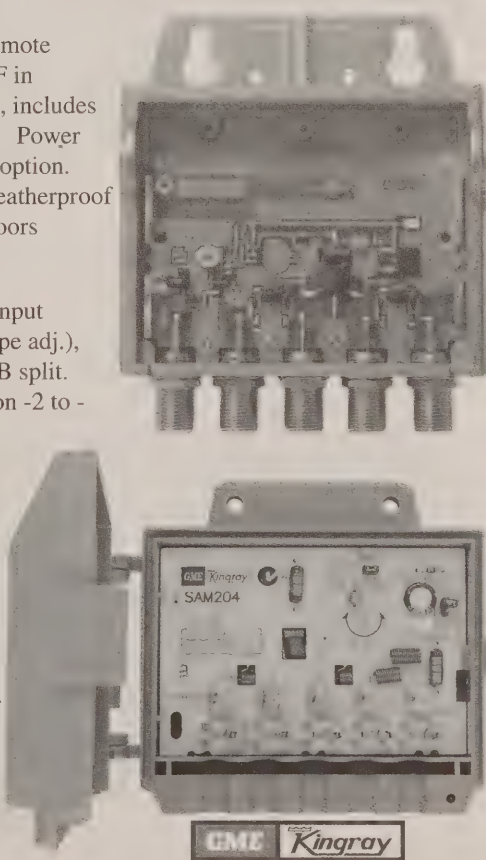
SA164F 1 input: +20dB VHF, +23dB UHF, -7dB split loss. Slope eq. 4 outputs, 100dB μ V max., nf <4dB typ. **F type female connectors.** Integrated mains supply. *R90.*

SA164P 1 input: +20dB VHF, +23dB UHF, -7dB split loss. Slope eq. 4 outputs, 100dB μ V max., nf <4dB typ. **PAL female connectors.** Integrated mains supply. *R90.*

Weatherproof Splitter Amplifiers, Variable Gain

SA164FR Remote Powered SA164F in shielded housing, includes PSK06F Supply. Power through cascade option. Add MHB01 weatherproof box for use outdoors *R126.*

SAM204 1 input +17dB VHF (slope adj.), +19dB UHF -7dB split. Slope equalization -2 to -6dB VHF. 4 outputs, Max. 98dB μ V, nf \leq 7dB typ. Screw & Clamp terminals. 14V DC requires PSK06 (not included) diode controlled power from any or all outputs. Weatherproof case included! *R82.*



Masthead Distribution Amplifiers

High output 118dB μ V @ -60dB IMR mast amp, with +19dB gain, <1.8dB nf, >10dB R.L., 12-24V DC @ 100mA.

MDA20L 44-860MHz with 44MHz High Pass filter *R126.*
MDA20H 174-860MHz with 174MHz High Pass flt. *R126.*
MDA20U 520-860MHz with 520MHz High Pass flt. *R126.*

Distribution Amplifiers Variable Gain

DW30 1 input: +30dB VHF & UHF 40-860MHz. Gain adj. -10dB, Slope equalization 5, 10 & 15dB. 1 output, max. 102dB μ V, nf \leq 7dB typ. F female connectors. PSK12 power supply included. *R168.*



DW42 2 inputs: VHF +35dB B1&2 +37dB B3, UHF +40dB. 3 x -20dB gain adj. B1, B3, UHF. Mixed or separate U/V inputs, selectable. 1 output, max. 118dB μ V, nf \leq 7dB typ. F female connectors. Shielded diecast housing. Requires PSK18S power supply (excluded) see page 40. *R292.*

DA43 1 input: 40-860 MHz +43dB amplifier. 1 output max 118dB μ V, -30dB Test Point. -20 dB midstage constant 75 Ω gain control; 5, 10 or 15 dB slope eq. nf <6dB. F female connectors. Shielded diecast housing. Requires PSK18S power supply (excluded) see page 40. *R320.*

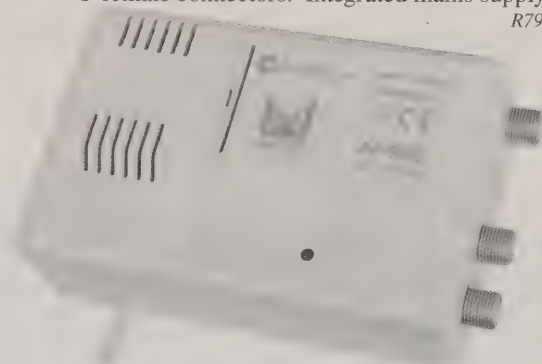


Distribution Amplifiers Variable Gain

AI900



1 input: +16dB VHF, +26dB UHF -4dB.
Gain controls VHF-16dB & mid stage UHF-12dB.
1st output: max. 104dB μ V, nf<4.5dB typ.
2nd output: -14dB, test point or reduced level out.
F female connectors. Integrated mains supply.
R79.



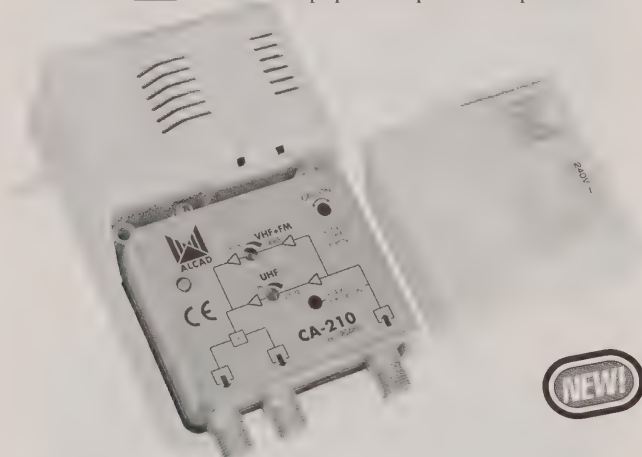
CA210

As CA215 with 24V DC line option. R94.

CA215



1 input: +28dB VHF +29dB UHF -4dB split loss.
Mid stage gain controls VHF-16dB & UHF-12dB.
2 outputs, Max. 102dB μ V, nf<4.5dB typ.
F female connectors. Integrated regulated supply.
12V DC Line amp. power option to input. R94.



AI221



1 input: +29dB VHF & UHF -4dB split loss,
passive 5-30MHz return path -5.5dB!
Mid stage gain control
VHF @47MHz-6dB & UHF @862 MHz -16dB.
2 outputs, Max. 105dB μ V, nf<6dB, RL> 10dB.
F female connectors. Integrated regulated supply.
R142.



CA310



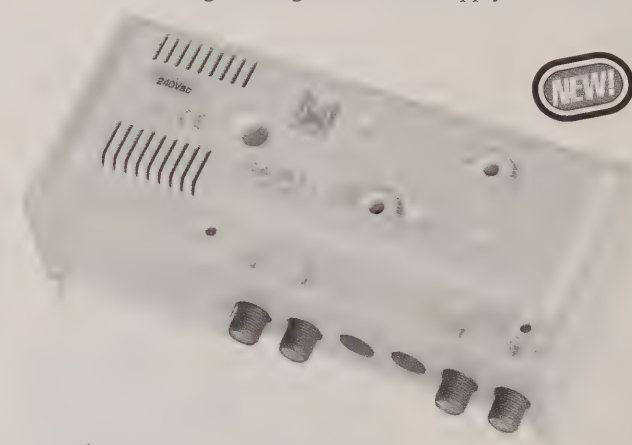
3 inputs: +33dB VHF, 46dB UHF1, &2 -4dB,
Gain controls VHF-24dB & UHF-16dB.
2 outputs, Max. 110dB μ V, nf5dB, rl \geq 13dB.
1 Test Point -30dB output.
24V DC 50mA Auto. power option to UHF1 in.
F female connectors.
Integrated regulated mains supply. R196.



CA311



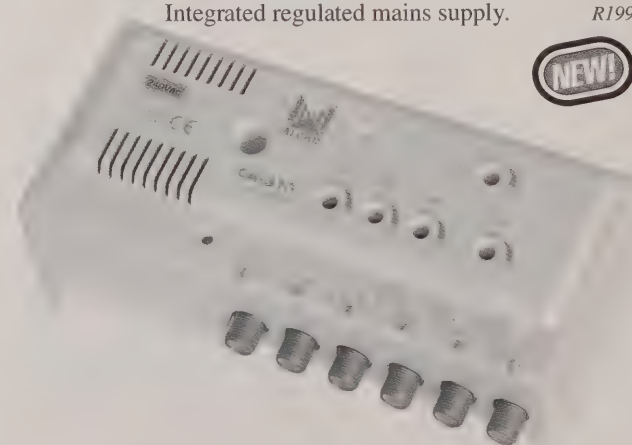
2 inputs: +36dB VHF, 49dB UHF -4dB split loss,
Gain controls VHF-20dB & UHF-16dB.
2 outputs, Max. 110dB μ V, nf4dB, rl \geq 10dB.
24V DC 50mA Auto. power option to UHF input.
F female connectors.
Integrated regulated mains supply. R185.



CA313



5 inputs: +29dB B1, &B3, +34dB UHF, B4, &B5,
Gain controls VHF-20dB & UHF-16dB.
1 output, Max. 114dB μ V, nf<6.5dB, rl \geq 10dB.
12V DC 50mA Auto. power opt. all UHF inputs.
F female connectors.
Integrated regulated mains supply. R199.



TechTip. install in ventilated places
where extreme temperatures won't shorten product life.

Powerful new TV amplifiers with up to 120dB μ V output, diecast housings use F connectors. Low noise and return loss with wide mains tolerance. Satellite IF models are Foxtel approved.

CA730



FOXTEL
APP. F10140

2 inputs: +42dB SAT IF, -2dB VHF & UHF mix, variable Gain -7dB and Slope eq. 15dB, 10dB fixed slope eq., Test Point out -30dB, 1 output, Max. 120dB μ V, nf<8dB, RL>10dB. Flatness \pm 3dB, \pm 1.5dB over 36MHz. 13 or 17V 350mA LNB supply, 22KHz generator.



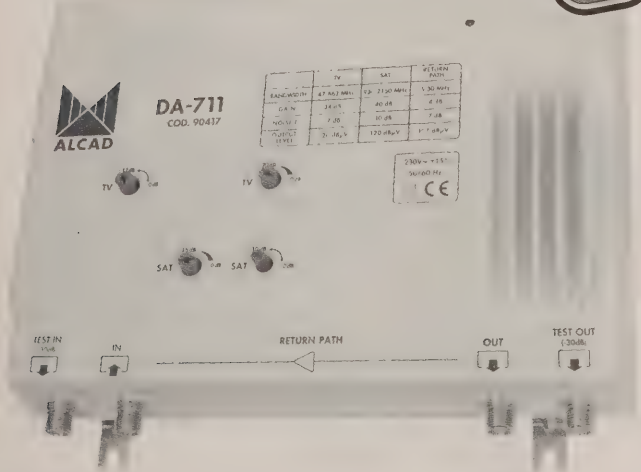
TechTip. a 40dB amplifier amplifies the input signal by a huge 100 times. This makes big amplifiers something to be used with care. For Digital TV a smaller amplifier with less gain can give more stable results than a bigger more powerful amplifier.

DA711



FOXTEL
APP. F10105

1 in: +41dB SAT, +34dB V&U, +4dB 5-30Ret.Pth. TV-17 SAT-10dB, Slope TV-20 SAT-15dB, Fixed slope Eq. -2.5dB R.P., 7dB SAT. In & Out Test Point -30dB. 1 output, Max. 120dB μ V. nf<8dB. Return Loss \geq 14dB R.P. \geq 10dB TV \geq 9dB SAT, Flatness \pm 3dB, \pm 1.5dB over 36MHz. 13 or 17V 350mA LNB supply, 22KHz generator.



CF111



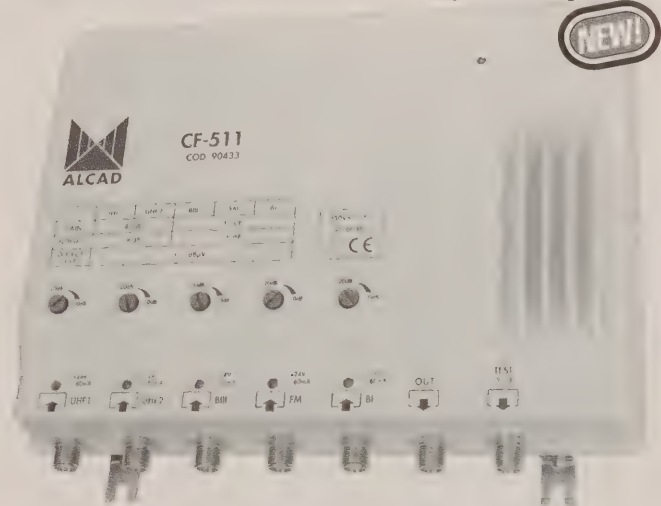
DISTRIBUTION AMPLIFIERS
1 input: +38dB VHF & UHF 47-862MHz, +10dB 5-30MHz Active Return Path, Gain control VHF & UHF -20dB, Slope 18dB, In & Out Test Points -30dB, 1 output, Max. 113dB μ V, nf<8.5dB, Return Loss \geq 10dB 47-862MHz, \geq 14dB 5-30MHz



CF511



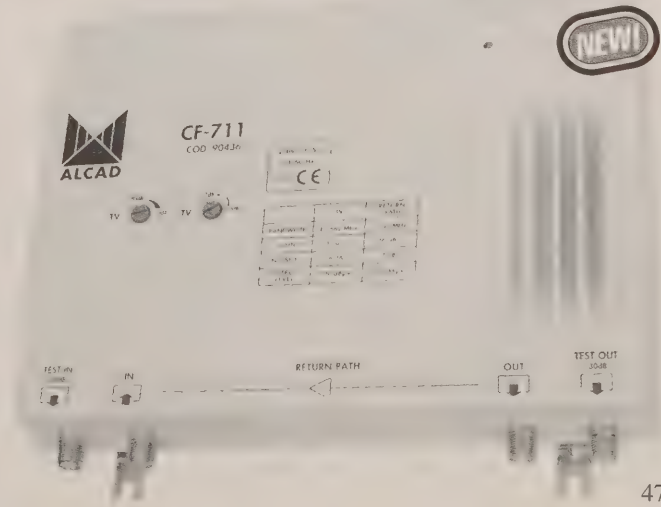
5 inputs: +40dB B1, FM, B3, +45dB UHF1, UHF2. Gain controls -20dB constant 75 Ω @ each input, 1 output, Max. 115dB μ V, nf<8dB, TestPoint-30dB. Return Loss \geq 10dB 47-862MHz, \geq 14dB 5-30MHz 24V DC@60mA automatically at each input.



CF711



1 input: +47dB 47-862MHz VHF & UHF, Gain control -20dB and Slope 18dB, In & Out Test Points -30dB, 1 output, Max. 120dB μ V, nf<8.5dB, Return Loss \geq 10dB 47-862MHz, \geq 14dB 5-30MHz



DISTRIBUTION AMPLIFIERS & TRANSMODULATORS

DA720



ALCAD

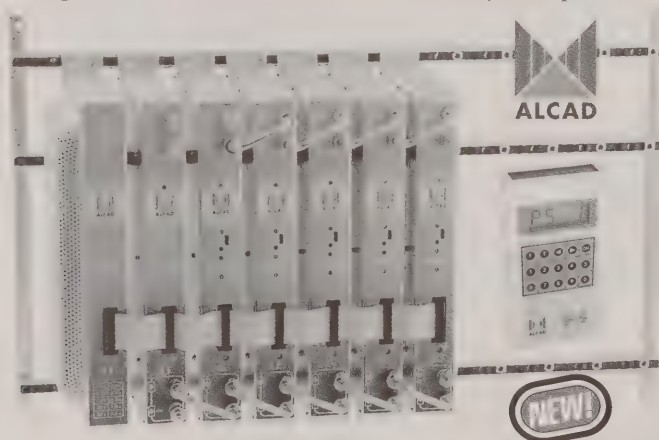
1 input: +36dB 47-422MHz VHF, 470-862MHz UHF. Split Band; Gain and Slope controls, VHF and UHF -20dB gain, 18dB Slope, In & Out Test Points -30dB.
1 output, Max. 120dBμV, nf<7dB,
Return Loss ≥10dB 47-862MHz, ≥14dB 5-30MHz



Terrestrial Transmodulators

*Highly stable, with Input Demod. and Output status LED's.
36 & 950MHz dual SAW filtered VSB, looping RF out.
Super & Teletext transparent, suits large MATV systems.*

TO551 COFDM (DVB-T) to PAL professional receiver. Quality RF output enables viewers to keep their analogue TV's when analogue broadcasts are switched off, making huge savings! Full Stereo Audio. 46-894MHz 85dBμV Output.



Satellite and Cable Transmodulators

*Mix with TO551 to deliver even more TV channels.
85dBμV spectrally clean VSB 36 & 950MHz dual SAW filtered, looping RF outputs. Tunable over 46 to 894 MHz.*

TP551 QPSK (DVB-S) to PAL receiver. Receives any Free to Air Digital Satellite broadcast in Ku or C bands, provides high quality stable RF output that can be distributed to everyone connected to your MATV system. Full Stereo Audio.

TQ501 QPSK to QAM (DVB-S to DVB-C) transmodulator. Converts satellite transponders to QAM for optimal carriage in VHF or UHF MATV distribution systems. C.A. is transparent.

FA310 Power Supply for 5 x TO551, 4 x TP561.
MS011 Mounting Rack for up to 10 x modules.
PA720 40-894MHz, +44dB, 119dBμV, 3.5dB nf amplifier.
PS003 2 way InfraRed programmer.

JH series MATV amplifiers can equalize, mix and amplify signals from several sources and are individually factory aligned for optimum performance. See FR cat 147 page 59 for full JH and JB amplifier range!

JH7RP45AU 3 inputs: +30dB B5, +29dB B4, +29dB B1&B3. 3 x -20dB constant 75Ω Gain controls. Output: 108dBμV VHF, 110dBμV UHF. nf: ≤ 3.5dB VHF, ≤ 5.5dB UHF. F female connectors. Mains regulated supply integrated, 12V DC pre-amp option to any input. Separate band 4 and band 5 inputs with >30dB isolation makes this quality amplifier useful for combining off air UHF with VCR's, Pay TV, etc. R278.



MBX amplifiers feature high gain and output power levels in an Award winning housing design with ±2dB linearity, band selectivity with >20dB isolation between inputs, -30dB output Test Point, constant 75Ω -20dB gain controls, 12V DC @50mA available at each input, switchmode power supplies and concealed controls. Full MBX range FR cat. 147 page 60!

MBX7741 4 x inputs: +40dB UHF, +40dB UHF, +40dB FM, +40dB B3 & B1. 4 x Gain controls. noise figure 11dB.
High 124dBμV output.

MBX5750 5 x inputs: +43dB UHF, +43dB B5, +43dB B4, +38dB B3, +35dB (B2&) B1. 5 x Gain controls. nf: 8.5dB UHF 4.5dB VHF. 119dBμV UHF, 116dBμV VHF output.

MBX7750 5 x inputs: +40dB UHF, +40dB B5, +40dB B4, +40dB B3, +40dB (B2&) B1. 5 x 75Ω Gain controls. nf: 11dB UHF & VHF.
High 124dBμV output.



AMP series broadband amplifiers share Fracarro's award winning MBX series housing design. Switchmode power supply reliability with concealed controls to reduce the likelihood of user interference.

AMP9762 1 input: +42dB over 47-862MHz. Gain and Slope controls -20dB constant 75Ω. Output 120dBμV. nf 8dB. Linearity ≤4dB. Return Path 5-30MHz passive or active.

AMP9763 1 input: +40dB over 47-862 & 2,400MHz. Gain and Slope controls for Terr. & Sat bands. Output 125dBμV Sat. nf 8dB Terr. 10dB Sat. Ret. Path 5-30MHz passive or active.

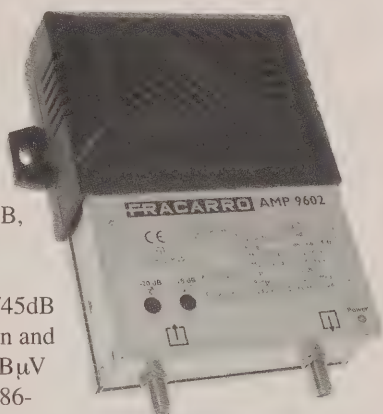
AMP9764 2 inputs: +40dB over 950 - 2,150MHz, -2dB 47-860MHz. Gain and Slope controls -20dB constant 75Ω. Output 125dBμV, noise figure 10dB.

Previously Philips AMP series amplifiers feature High Output Levels and Gain in fully shielded housings that incorporate F connectors. Proven performers with return path capabilities.

AMP9602

1 input:
+34dB 86-862MHz,
-2dB 5-65MHz.
-20dB Gain 18dB Slope
constant 75Ω controls.
112dBμV output IM3 -52dB,
nf 6dB.

AMP9603 1 input: +40/45dB
950-2,150MHz, -18dB Gain and
10dB Slope controls, 114dBμV
output IM3 -35dB; +30dB 86-
862MHz, -20dB
Gain and
18dB Slope
controls
constant
75Ω, -2dB
5-65MHz.
108dBμV
output IM3 -
60dB.



PHILIPS
SMATV is now FRACARRO

FRACARRO

High power 124dBμV out +38dB gain GaAs FET CATV amplifiers, 47-862MHz, 6dB noise figure. Huge feature range includes flexible output options, Test Points @ In and Out, Active or Passive Return Path with Test Point, Dynamic Ingress Blocking upgradeable. 24-65V AC @ 540-250mA Line and 175-260V AC @ 12.5W Mains.

AMP552AL Adjustable -18dB gain & eq., Line power.

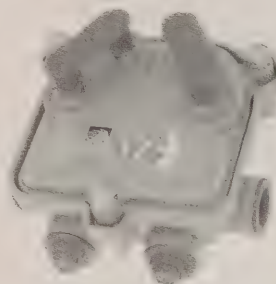
AMP552AM Adjustable -18dB gain & eq., Mains pwr.

AMP552PL Pad -22dB gain & -18dB eq., Line power.

AMP552PM Pad -22dB gain & -18dB eq., Mains pwr.



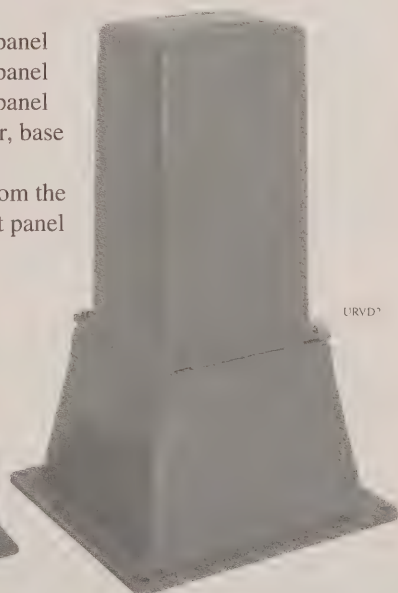
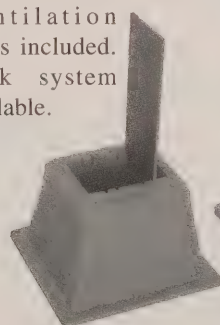
AMP522
FR CAT147 P.83



SATMM** High end
5MHz to 1GHz CATV
Multimedia Taps and Splitters for
longer hardline cable runs. EMI
shielding ≥100dB. Versatile
weatherproof housing for aerial,
pillar or MDU mounting.
Connectors: stingers in and out, F
connector drops, sealed; brass, tin
plated. Housings Powder Coated.

Laceys.tv also sell American Hardline Cable,
Stinger Connectors and adapters.

URDV1 263 x 203mm panel
URDV2 470 x 205mm panel
URDV3 263 x 288mm panel
Outdoor equipment pillar, base
and bolts. Green colour.
Protects outdoor plant from the
elements. 1 x equipment panel
included with each unit.
Ventilation
holes included.
Lock system
available.



URDV*

MP K series preamplifiers, fixed gain. Helps signal levels reach required drive levels for K120A etc. F connectors female input to male output, 12V DC low 20mA current with long 30cm power cable. VSWR<2, 108dBμV out.

FRACARRO

MP04AF Band 4,
470-590MHz, +17dB, nf<3dB.
MP05AF Band 5,
606-862MHz, +14dB, nf<4dB.
MP45AF Bands 4 and 5,
470-862MHz, +15dB, nf<4dB.
MP13AF Bands 1 and 3,
47-300MHz, +20dB, nf<3dB.

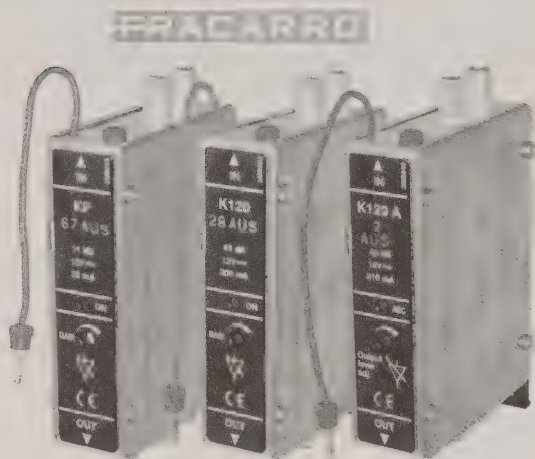


K Series MATV Electronics

KF series Final Push Pull Amplifiers

An exciting range of MATV head end products that combine Fracarro's MATV experience with benefits of F connectors to provide functional excellence without high cost. Included in the range are Digital and Analogue receivers, Channel Processors and the Worlds first addressable QPSK to QAM Transmodulator. Mounting and set up are simple thanks to common DIN rail.

K series Single Chanel Amplifiers

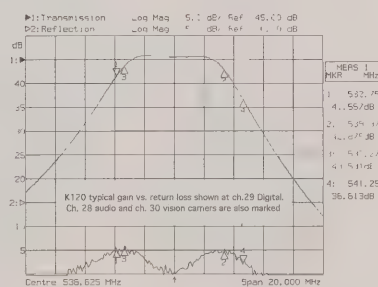


KF../. +9dB VHF, 11dB UHF, 95dB μ V maximum output Single Channel Amplifier with 5 for VHF and 4 for UHF resonant filters. Gain adj., 12V DC @20mA VHF, 38mA UHF.

K120../. +45dB gain, up to 121dB μ V maximum output Single Channel Amplifier with 5 for VHF and 4 for UHF resonant filters. Gain adjustable, 12V DC@180-200mA.

K120A../. Automatic Gain Control ± 15 db, +45dB gain, 120dB μ V maximum output Single Channel Amplifier. Five resonant filters provide high selectivity that works properly with even adjacent Digital channels! Output level adjustable, 12V DC @ 210mA. Use anywhere input signal levels fluctuate.

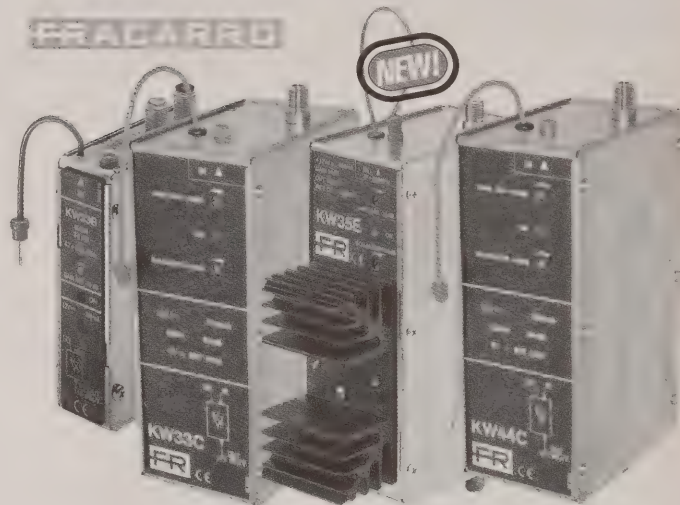
Among the best single channel amplifiers available, regardless of price. Features include stable tuning over a wide temperature range, outstanding selectivity, module combining systems that really work, insensitivity to static discharge with healthy return loss and noise figures. Available for S11-S38 too!



KFB3 All Band 3 (174-230MHz) amplifier +20dB, with installer tunable notch filter, 12V DC @~150mA.

KFB4 All Band 4 (470-590MHz) amplifier +13dB, -20dB constant 75 Ω gain control, 3 notch filters of ~15dB atten. each, nf \leq 4dB, 12V DC@130mA. Compatible with KF series single channel modules.

KFB5 All Band 5 (606-862MHz) amplifier +11dB, -20dB constant 75 Ω gain control, 3 notch filters of ~15dB atten. each, nf \leq 4dB, 12V DC@130mA. Compatible with KF series single channel modules.



Higher signal level output capacities and lower IM2 2nd order intermodulation distortion.

KW33B +34dB gain, 116dB μ V output. Gain adj. 20dB, 12V DC@300mA. 47-862MHz K series final amplifier.

KW33C +32dB gain, 121dB μ V output. Gain adj. 20dB, Slope adj. 20dB. 12V DC@510mA. 47-862MHz K series high output final amplifier.

KW35E +35dB gain, 125dB μ V output. Gain adj. 20dB, Slope adj. 20dB. 12V DC@830mA. 47-862MHz high output K series amplifier. Passive 5-30MHz Return Path included.

KW44C +44dB gain, 121dB μ V output. Gain adj. 20dB, Slope adj. 20dB. 12V DC @550mA. 47-862Mhz high gain and high output K series amplifier.

K series Return Path Amplifiers

KW530 Amplify 5-30MHz Return Path by up to 20dB, nf \leq 5dB, 105dB μ V max. Connect between Headend Out and System. 47-862MHz Out and In terminals permit Amplification via KW33 etc., Pass or Stop @ <-1.5dB; 12V DC @30mA.

KW540 As KW530 for 5-40MHz return, 54-862MHz fwd.

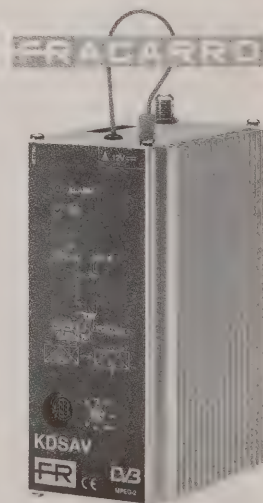
K series Digital Satellite TV Receivers

Highly stable Free To Air DVB-S QPSK receivers. Symbol rates from 4,420 MS/s for receiving SCPC and MCPC signals. Automatic PID update ensures A/V synchronisation and reduces service calls for broadcaster parameter changes. Meets ETSI 300421. Power: 12V DC @ 800mA. Dim: 74 x 188 x 112mm.

KDSU 470 - 865MHz output @90dB μ V DSB RF

KDSV 170 - 260MHz output @90dB μ V DSB RF

KDSAV A/V outputs, use with KCMU/S modulator for VSB.



Headend GSM LAN Remote Control

NEW headend management module. Remote monitor and reprogram of up to 12 KTP programmable devices via integrated 2 Watt GSM cell phone transceiver or 10baseT LAN. Flexible, updatable, and will be able to be used with other devices.

KTLC Remote Control Module 12VDC 100mA-950mA.

QPSK - QAM Transmodulator

NEW QPSK - up to 128QAM Digital Transmodulator. Converts digital satellite signals to more robust QAM for distribution around a cable system. CA transparent. Set up with KTP programmer.

KDTS VL-C2 Max output 90dB μ V. 12V DC @ 530mA.

COFDM - PAL Transmodulator

NEW DVB-T receiver with high level PAL analogue RF output. Two models for VHF or UHF channel output. Set up with KTP programmer.

KDRTT/VH-CD 175-300MHz 103dB μ V, 12VDC 720mA.

KDRTT/UH-CD 474-858MHz 105dB μ V, 12VDC 690mA.

Channel Processor Digital or Analogue

NEW fully agile Channel Converter for Digital or Analogue channels. High freq. stability, SAW filtering and AGC ensure reliable output. No measurable impact on Digital Signal Quality. 174-230 / 470-862MHz input. Set up with KTP programmer.

KCP 118-862MHz 95dB μ V (digital) out. 12VDC 430mA.

K series TV Channel Converters

Output channel adjustable in 250 KHz steps with KTP programmer, input filters factory fixed. Use with KF/.., K120/.. or K120A/.. to filter output. 12V DC @ 120mA.

KK1-U Input range 47-68MHz Output range 470-862MHz.

KKU-1 Input range 470-862MHz Output range 47-68MHz.

KK3-4 Input range 174-230MHz Output range 470-606MHz.

KK4-3 Input range 470-574MHz Output range 174-286MHz.

KK5-3 Input range 574-702MHz Output range 174-286MHz.

KK6-3 Input range 702-862MHz Output range 174-286MHz.

K series 2GHz Satellite TV Accessories

Amplify 950-2,150MHz Sat. IF and mix 47-862MHz @ -1dB.

KX125 +38dB @ 950MHz +44dB @ 2,150MHz sloped gain, -20dB regulation, 125dB μ V max. out, nf6dB, 12V DC @ 310mA.

KX125NT +35dB @ 950-2,150MHz, -20dB gain regulation, 125dB μ V maximum output, nf6dB, 12V DC @ 280mA.

K1-2 LNB supply / splitter, 14V or 18V DC @ up to 250mA and 22KHz tone. 2 outputs @ -5dB. 12V DC @ 500mA.

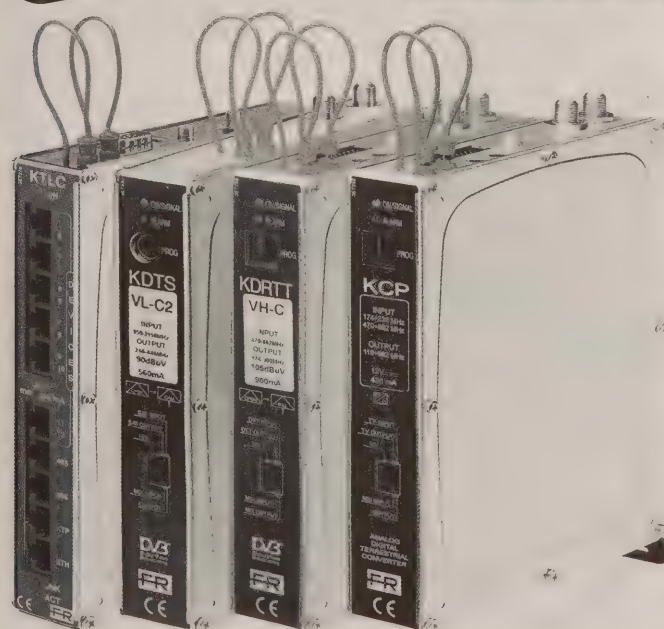
K2-8 LNB supply / active splitter x 2. Divides signals from 2 LNB inputs four ways, 0dB insertion loss. Provides 14V or 18V LNB supply and 22KHz tone. 12V DC @ 620-750mA.

KCIF-IF Programmable 1st IF converter. Input loop through enables simultaneous connection to other modules. Input 47-77dB μ V, Output 80-95dB μ V. LNB line power availab. 12V DC @ 280mA. Set up with KTP and TR DIN-RJ.

A broad range of Sat IF mixers and filters is also available in K series. Details page 49 of Fracarro catalogue 146.

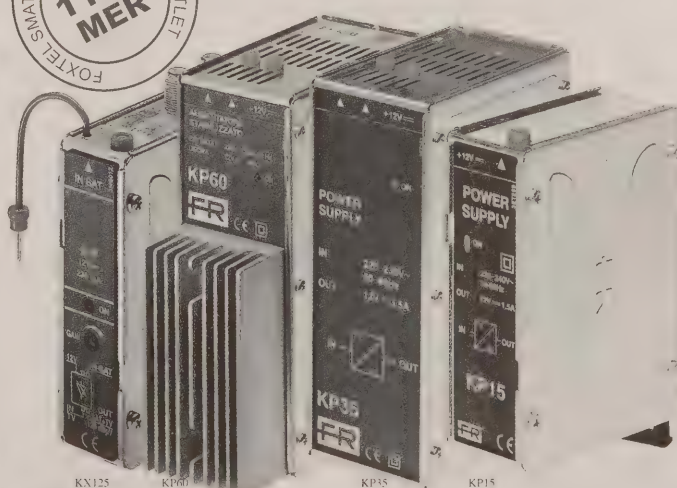
NEW!

FRACARRO



FOXTEL SATV REQUIRED AT EACH OUTLET
~
11dB MER

FRACARRO



NEW!

KP. POWER SUPPLIES DESCRIBED NEXT PAGE.

K series Power Supplies

KP's are quality switch mode power supplies that perfectly match the K series and are rated at 100% duty cycle.

KP15 Mains power supply, 12V DC at 1.5 Amps continuous, 1.5A maximum. 240V AC @ 23 Watts.

KP35 Mains power supply, 12V DC at 3.5 Amps continuous, 3.5A maximum. 240V AC @ 55 Watts.

KP60 Mains power supply, 12V DC at 6 Amps continuous, maximum @ $\leq 45^{\circ}\text{C}$. 240V AC @ 92 Watts.

TechTip. specify your mains supplies with care. A 2Amp 40% duty cycle supply can deliver no more than 800mA continuously

2,150MHz Optical Fibre Solutions

Extend an 88-2,150MHz system up to 10km using one fibre! Locate dishes and antennas off site to deliver a wide range of services to several buildings and eliminate visual clutter. Drive with K120A/.. to ensure long Tx life.

Single Mode 1310nm. Single Mode 1310nm. SC/APC optical connectors.

KTX2150 >3dBm out 118-2150MHz transm. 150mA.

KRX2150 >77dB μ V out 118-2150MHz receiv. 200mA.

KTX2150L 4dBm out 88-2150MHz transmitter. 150mA.

KRX2150L >89dB μ V out 88-2150MHz receiv. 200mA.

1310nm Optical Splitters. Connect anywhere in the network to share 1 head end between several buildings. Passive.

KSP1-2 2 way -3.2dB. RI & Isol. >45dB. 0mA.

KSP1-4 4 way -6.4dB. RI & Isol. >45dB. 0mA.

5-65MHz Return Channel transceiver for a separate fibre.

KTX-RC 0dBm out 5-65MHz transmitter. 160mA.

KRX-RC 93dB μ V out 5-65MHz receiver. 90mA.

**K series Accessories**

KA600 Mounting cabinet 600mm high x 500mm wide x 180mm deep. Key locked, well ventilated, beige in colour. Rear panel DIN rail ready. A better box, easy to install.

KA800 Mounting cabinet 800mm high x 500mm wide x 180mm deep. Key locked, well ventilated, beige in colour. Rear panel DIN rail ready. A better box, easy to install.

KD100 Standard DIN mounting rail 1m. long x 35mm x 15mm x 1.5mm. Mounts all K series modules.

KPN42 42mm F type interconnect bridge.

KPN51 51mm F type interconnect bridge.

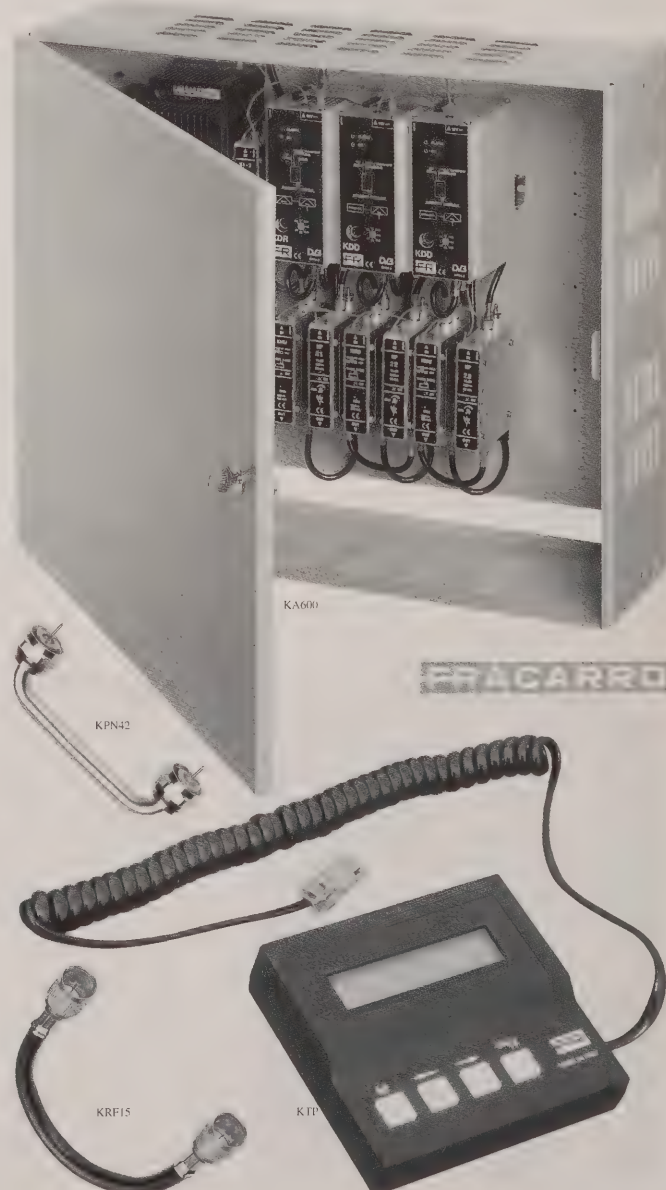
KRF15 150mm Quick F shielded interconnect lead.

KRF45 450mm Quick F shielded interconnect lead.

KTP Universal Fracarro programmer. 32 character LCD status indicator, four keys, easy to use.

TRDIN-RJ Adapter connects KTP to MiniDIN KCIF-IF.

TWIN-RJ45 Twin RJ45 loop through for KTLC.



Audio Video Modulators Double Sideband

Now you can make any DVD, Camera or Video and Audio source into a TV channel, and mix it with your off air TV for distribution to every set on the antenna system.

MD-11P High output level DSB extended UHF modulator. Mains power supply integrated for improved reliability. Will drive any K series or similar filter amplifier module to maximum output without further amplification. RF in enables easy mixing with off-air TV @ -3dB. F type RF and RCA AV connectors. No drift tuning system with $<10^{-5}$ frequency stability via μ p PLL. Audio Deviation preset for 775mV @ 10k Ω , adjustable. Channel changes implement after power down. 470-862MHz Ch.A20-75 UHF. Video input 1V @ 75 Ω . Output level 80dB μ V. R186.

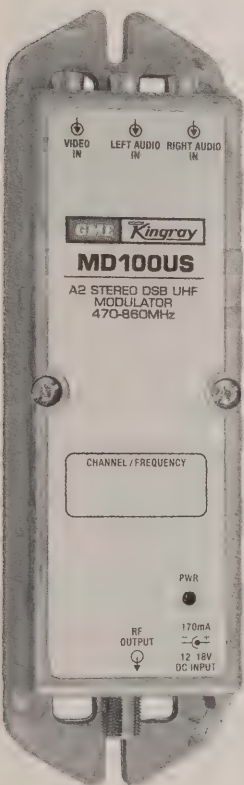
GRAETZ



TechTip. install in ventilated places where extreme temperatures won't shorten product life.

AV Modulator Kingray

NEW double sideband *true Stereo* modulator. Continuous coverage in 250KHz freq. steps, PLL stable, with 63-103dB μ V out. Video 1Vpp@75 Ω ; audio >.1V @10K Ω . Mount holes 170mm apart. Stand alone or GME Kingray rack mount option.



MD-100VS
44-470MHz. Ch. A0-12+
requires 500mA PSK-18S or 1700mA
PSK18KR. R352.

MD-100US
470-860MHz. Ch.A20-75
requires 500mA PSK-18S or 1700mA
PSK18KR. R352.

PSK-18S
500mA external supply 18V DC
R40.

PSK-18KR
1700mA external supply 15V DC
R90.

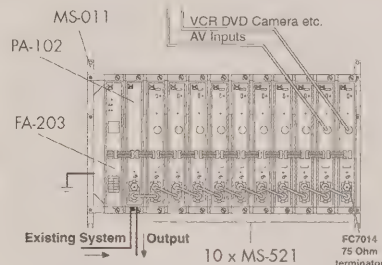
TechTip. channel or band selective mixing should be used to eliminate harmonic interference. Mixing with broadband splitters or combiners can invite system trouble down the track.

TechTip. DSB requires the adjacent lower channel vacant. 2 channels space is recommended between each modulated channel.

AV Modulators Vestigial Sideband

MS521 47 - 862MHz dual SAW filter 85dB μ V VSB modulator suitable for adjacent channel environments. Features true Stereo audio and tunes anywhere between 47 and 862MHz with 85dB μ V output. Powered by FA203 supply, compatible with PA102 launch amplifier and MS011 mounting rack. PS003 programmer required see p. 48.

FA203 Power Supply for MS521 etc.
MS011 Mounting Rack for up to 10 x MS521.
CD113 RCA - MiniDin AV input cable 1.8m.



NEW!

ALCAD



Now small communities, hospitals or hoteliers have the chance to create their own TV channels. Skillfully engineered with nothing left to chance includes VSB, true Stereo and up to 85dB μ V output.

KCMVS/KCMUS feature super clean outputs, highly recommended for large headends. Mechanically K series compatible. Set up with KTP programmer & TRDIN-RJ.



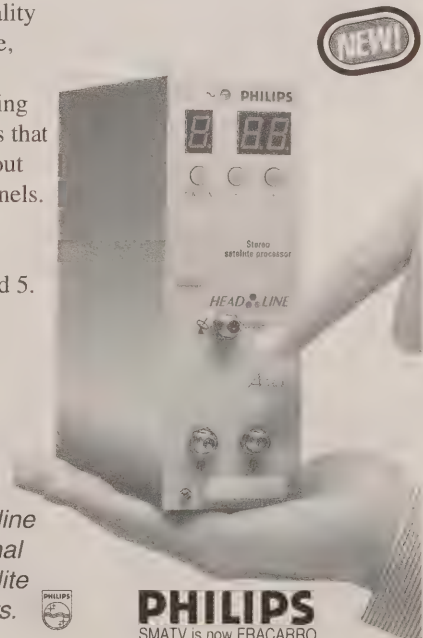
KCMV/S VHF VSB modulator with Stereo Audio. 174-382MHz. 90dB μ V output. 12V DC @ 450mA.

KCMU/S UHF VSB modulator with Stereo Audio. 470-862MHz. 90dB μ V output. 12V DC @ 440mA.

One of the highest quality modulators available, Headline includes individual programming μ p's and power supplies that permit changes without interrupting other channels.

SIG8168001 UHF bands 4 and 5.
SIG8167001 S Hyperband
SIG8166001 VHF band 3
SIG8165001 VHF band 1

Ask about the Headline range of professional terrestrial and satellite channel processors.



PHILIPS
SMATV is now FRACARRO

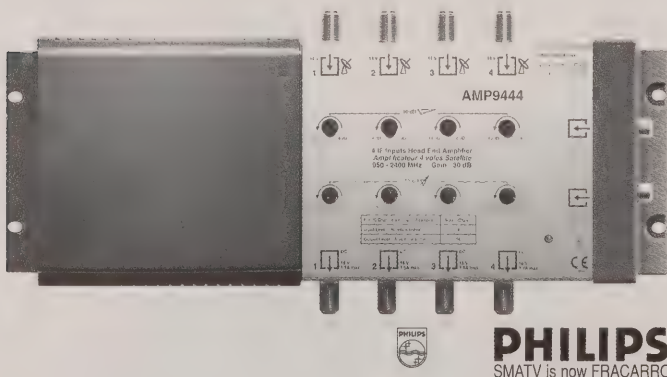
NEW Fracarro Compactline for reception and distribution of up to 6 Terrestrial or Satellite Digital TV channels, output in UHF or VHF. Ideal for small to medium networks in hospitals, hotels and collective housing. Easy to install, one unit includes 6 quality free-to-air receivers, 6 AV modulators, combiners and final 100 dBuV amplifier. Programmer (password protected) with backlit display and 187-264V regulated SwitchMode Power Supply included.

- ° Silent convection cooling, no fan noise.
- ° Designed to provide years of trouble free operation.
- ° Last channel re-set after power fail.



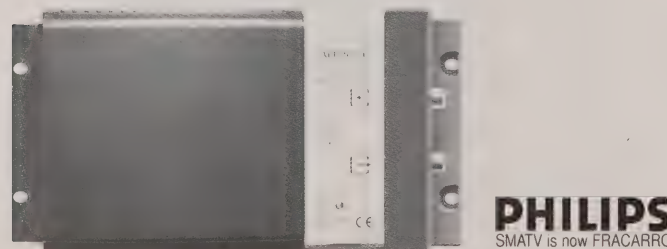
GII Switchline, better IF amplification x 4.

AMP9444 Quality GII 4 x IF amplifiers +30dB Gain. Gain -15dB and Tilt -10dB adj. 118dBμV output (IM3-35dB 2 carriers). ≤830MHz >-35dB. SMPS w. 600mA Inbf current avail. *PRO*



GII Switchline Power Supply.

AMP8331A 3AMP 18V, 207 - 264V AC Switch Mode Power Supply, complete with 5-2,400MHz inserter.



GII Switchline, cascadeable 4 x 2, 150MHz Satellite IF and 1 active Terrestrial RF input Multiswitch system - for larger installations. Possibly the world's best multiswitch system, employed widely in UK and in Sky UK's customer centre. Up to 15dB Sat and 20dB Terrestrial attenuation on each input, >26dB isolation between outputs with -35dB 860MHz IF filters. SWI75** series incorporate mains supplies and a 47-862MHz RF path. SW169** and SW179** 9 wire (8 x IF 1 x RF) versions also available.

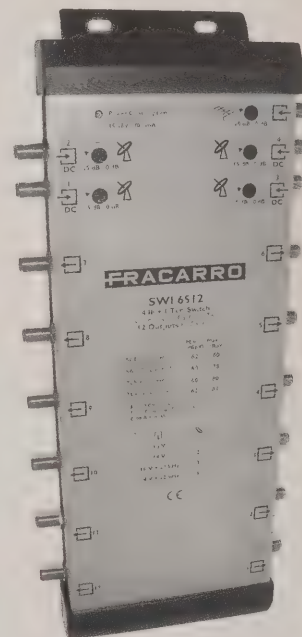
SWI6516 16 out Multiswitch.
IF thru -6/-5dB, RF -4dB.
Cascadeable, remote powered.
RF 47-862MHz.

SWI6512 12 out Multiswitch.
IF thru -6/-3dB, RF -4dB.
Cascadeable, remote powered.
RF 87-862MHz.

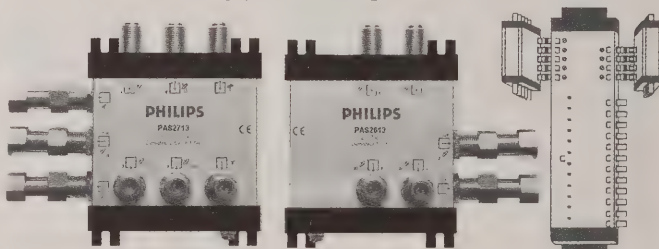
SWI6508 8 out Multiswitch.
IF thru -4/-0dB, RF 2dB.
Cascadeable, remote powered.
RF 87-862MHz.

SWI6506 6 out Multiswitch.
IF thru -4/-1dB, RF 2dB.
Cascadeable, remote powered.
RF 87-862MHz.

SWI6504 4 out Multiswitch.
IF thru -6/-3dB, RF 0dB.
Cascadeable, remote powered.
RF 87-862MHz.

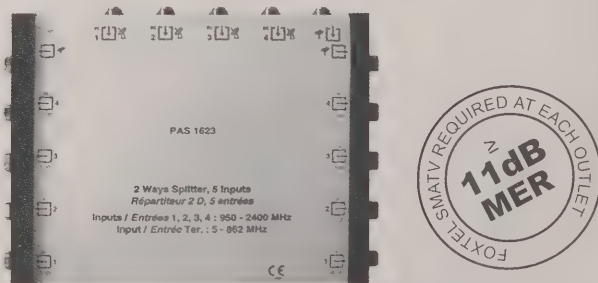


PAS2613 & PAS2713 taps to cascade GII multiswitches. Sung fit to sides of SWI65** and SWI75**. Loops signals and up to 3 Amps of power to the next switch. Better linearity permits longer cascades.



PAS2613 GII multi taps. 2 x -10dB 2,150MHz Satellite I.F., -2dB thr. loss. Excellent ±.5dB linearity. 3 Amp Power Pass.

PAS2713 GII multi taps. 2 x -10dB Sat. I.F. & 1 x -13dB Terrestrial R.F. Tap, -2dB thr. loss. Excellent ±.5dB linearity.



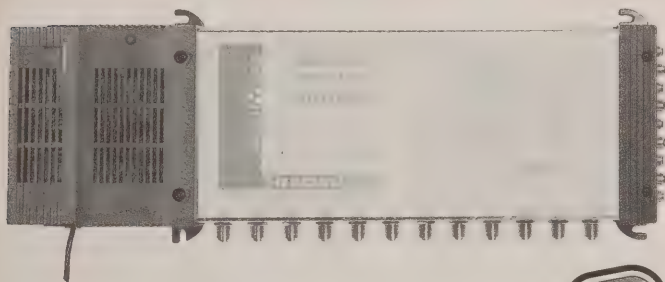
PAS1623 Quality GII 5 x 2 way Splitters, ±1dB linearity. Inputs 1-4, 950-2150MHz. Input 5, 5-862MHz.



Compact 3D Switchline, 4 input Satellite IF and 1 Terrestrial RF 5-862MHz input Multiswitch system - for medium sized installations. Satellite lines active & sloped for effectively no through loss. >28dB output isolation.

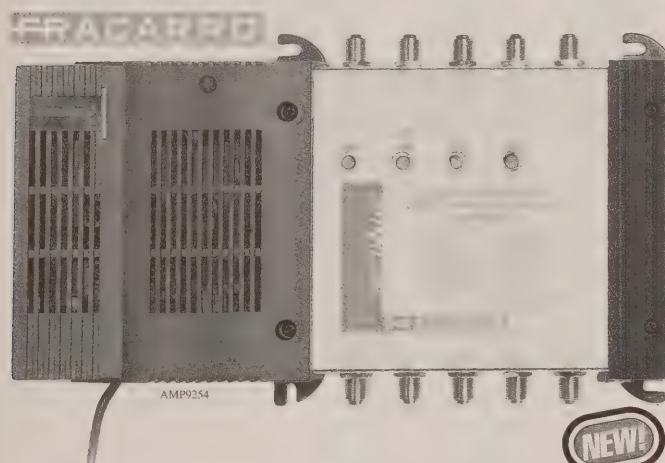
Also available in 9 wire SWI59** (8 x IF 1 x RF).

- SWI5506A** 6 output 5 input Multiswitch.
Through loss IF +2/+4dB, RF -16dB. *PRO*
- SWI5508A** 8 output 5 input Multiswitch.
Through loss IF +2/+4dB, RF -17dB. *PRO*
- SWI5512A** 12 output 5 input Multiswitch.
Through loss IF -1/+3dB, RF -20dB. *PRO*
- SWI5516A** 16 output 5 input Multiswitch.
Through loss IF 0dB, RF -20dB. *PRO*

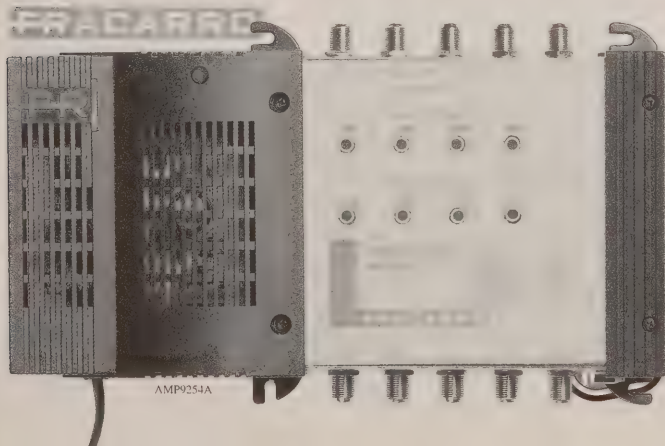


Compact 3D Switchline, 5 input Sat IF Amplifiers. 4 IF inputs. 5-862MHz Terrestrial RF, -1dB. Includes 400mA LNBF supply. Switchmode mains powered to ensure high reliability. Also available in 8/9 wire AMP9294.

- AMP9254** 4 in Sat. amp, 19 to 25dB Gain (-15dB variable), fixed Slope. 112dBμV maximum output (2 channels). *PRO*

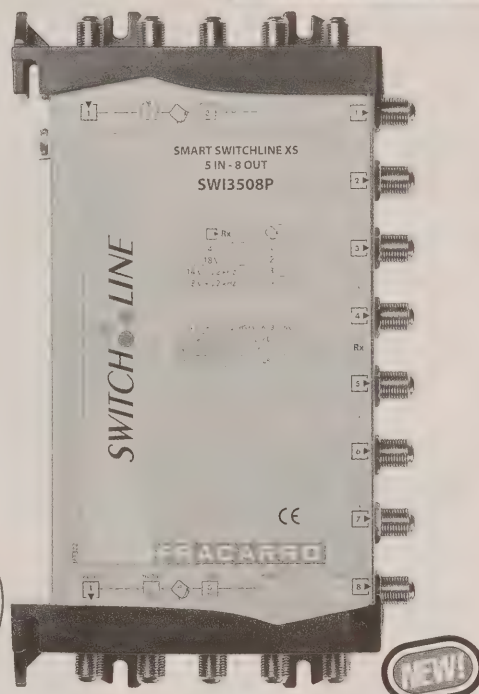


- AMP9254A** 4 in Sat. amp, 32dB Gain (-15dB variable), Slope variable 0-12dB. 116dBμV maximum output (2 channels). *PRO*



Smart Switchline XS5, 4 Satellite IF and 1 Terrestrial RF input Multiswitch system. Taps and Switches are blended into single, easy to fit housings, creating neat cost effective SMATV systems. Set Top Box powered, >28dB output isolation. Also available in 4 wire SWI44** and 9 wire SWI39** (8 x IF 1 x RF). Expandable to distribute up to 16 polarities with SWI1201B MiniDiSEqC switch family.

*TechTip. need more than 4 IF inputs? Smart Switchline XS9 has the answer. SWI390*T switches up to 8 IF inputs to 4, 6, or even 8 receiver outputs. Receiver powered, any output can select any input!*



- SWI3504P** 4 output 5 input Multiswitch. IF tap loss -20/-16dB, IF thru -2dB. RF tap loss -19dB, RF thru loss -2.5dB.

- SWI3504A10** 4 output 5 input Multiswitch. IF tap loss -8dB, IF thru -2dB. RF tap loss -15dB, RF thru loss -3dB.

- SWI3504A** 4 output 5 input Multiswitch. IF tap loss -2/+1dB, IF thru -2dB. RF tap loss -15dB, RF thru -loss 3.5dB.

- SWI3504T** 4 output 5 input *end of line* Multiswitch. IF tap loss -1/+2dB. RF tap loss -12dB, Thru 75Ω terminated.

- SWI3506P** 6 output 5 input Multiswitch. IF tap loss -21/-16dB, IF thru -2.5dB. RF tap loss -19dB, RF thru loss -4dB.

- SWI3506A10** 6 output 5 input Multiswitch. IF tap loss -8dB, IF thru -2.5dB. RF tap loss -15dB, RF thru -4.5dB.

- SWI3506A** 6 output 5 input Multiswitch. IF tap loss -3/+1dB, IF thru -2.5dB. RF tap loss -15dB, RF thru -5dB.

- SWI3506T** 6 output 5 input *end of line* Multiswitch. IF tap loss -2/+2dB. RF tap loss -13dB. Thru 75Ω terminated.

- SWI3508P** 8 output 5 input Multiswitch. IF tap loss -21/-16dB, IF thru -3.5dB. RF tap loss -25dB, RF thru loss -1dB.

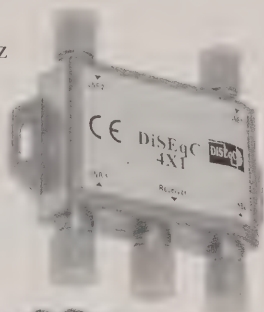
- SWI3508A10** 8 output 5 input Multiswitch. IF tap loss -8dB, IF thru -3.5dB. RF tap loss -22dB, RF thru loss -3dB.

- SWI3508A** 8 output 5 input Multiswitch. IF tap loss -2/+1dB, IF thru -3.5dB. RF tap loss -22dB, RF thru loss -3dB.

- SWI3508T** 8 output *end of line* Multiswitch. IF tap loss -2/+1dB. RF tap loss -14dB. Thru 75Ω terminated.

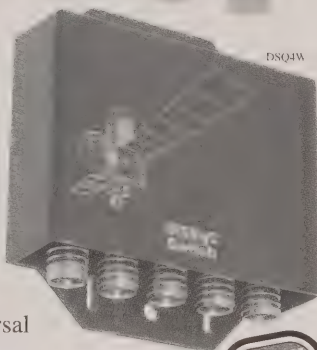
Automatically switch between up to 4 separate LNBF's on several dishes, using the DiSEqC 1.0 control function that is built into most satellite receivers.

Frequency range: 900-2,400MHz
Insertion loss: ≤ 3.0 dB
Isolation: > 25 dB
Current drawn: 30 mA max
Power Pass: 500mA max
Connectors: F type female



DSQ4B Indoor
4 way DiSEqC switch. R17.

DSQ4W Weatherproof
4 way DiSEqC switch. R19.



Special Satellite products

S112E 5-2,300MHz universal switch, 12V DC controlled, passes 22 kHz and DiSEqC signals. R36.

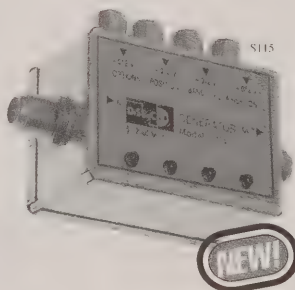
Specifications
Frequency Range: 5-2,300 MHz
Control: 0/12 Volts DC
Current Drawn: 30 mA
Insertion Loss: 3dB typical
Isolation: 35dB typical
Connectors: F type female



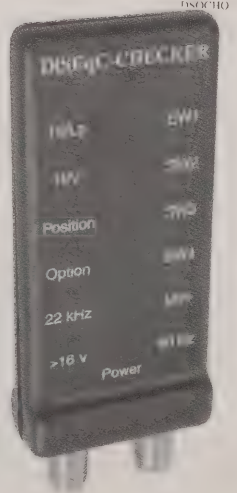
S115 DiSEqC 1.0 command generator and inserter. 4 x RCA inputs for 12V DC control lines. R48.

LED command indicators:
1) Vertical / Horizontal
2) Low Band / High Band
3) Position A / B
4) Option A / B

Specifications
Frequency Range: 5-2,300 MHz
Control: 0/12 Volts DC
Current Drawn: 40 mA
Insertion Loss: < 2 dB typical
Connectors: F type female



DSQCHQ
Check DiSEqC status.
13 LED's enables tracking of elusive DiSEqC system faults. Connects in line between satellite receiver and DiSEqC switch (etc.) via F type female connectors. Powers from set top box or instrument. Batteries or other external supply not required. R98.



Combination Work Clothes

A new style of workclothes for Australians. Multi pocket pants with toughened knee zones and knee pad pockets, more pockets and zip away sections. Also a 2 way zip up vest with still more pockets. Now you can carry tools and materials, leaving both hands free to work!

COMBIPANTS Combination workpants with 3 piece zip off legs that enable use as shorts, 3/4 pants or long. Extra strong Cordura reinforced knee sections include pockets for kneepads. Pockets for almost every purpose conceivable. Roomy front and back pockets, extra front hanging pockets that can be tucked in, knife pocket, folding ruler pocket, pencil pocket, sheath knife fastener and loop, hammer holder, even a mobile phone pocket!



Colours: Marine Blue, Grey, Black

Sizes:	Metric	Imperial	Order
77R		30	C44
82R		32	C46
87R		34	C48
92R		36	C50
97R		38	C52
102R		40	C54
107R		42	C56
112R		44	C58
117R		46	C60
122R		48	C62

COMBIVEST Combination workvest with two way front zip and pockets for just about everything. Six general purpose pockets plus two loose hanging lower pockets - that clip up when not required, with pencil pocket, folding ruler pocket, sheath knife fastener and loop, hammer holder and mobile phone pocket.

Colours: Marine Blue, Grey, Black
Sizes: S, M, L, XL, XXL



Australian TV Channel Design & Limits

Band	Channel number	Vision MHz	1st Sound MHz	Limits MHz	Centre Freq.
VHF 1	0	46.25	51.75	45-52	48.5
	1	57.25	62.75	56-63	59.5
	2	64.25	69.75	63-70	66.5
VHF 2	3	86.25	91.75	85-92	88.5
	4	95.25	100.75	94-101	97.5
	5	102.25	107.75	101-108	104.5
VHF 3	5A	138.25	143.75	137-144	140.5
	6	175.25	180.75	174-181	177.5
	7	182.25	187.75	181-188	184.5
	8	189.25	194.75	188-195	191.5
	9	196.25	201.75	195-202	198.5
	9A	203.25	208.75	202-209	205.5
	10old	209.25	214.75	208-215	211.5
UHF 4	10new	210.25	215.75	209-216	212.5
	11old	216.25	221.75	215-222	218.5
	11new	217.25	222.75	216-223	219.5
	12	224.25	229.75	223-230	226.5
	28	527.25	532.75	526-533	529.5
	29	534.25	539.75	533-540	536.5
	30	541.25	546.75	540-547	543.5
UHF 5	31	548.25	553.75	547-554	550.5
	32	555.25	560.75	554-561	557.5
	33	562.25	567.75	561-568	564.5
	34	569.25	574.75	568-575	571.5
	35	576.25	581.75	575-582	578.5
	36	583.25	588.75	582-589	585.5
	37	590.25	595.75	589-596	592.5
	38	597.25	602.75	596-603	599.5
	39	604.25	609.75	603-610	606.5
	40	611.25	616.75	610-617	613.5
	41	618.25	623.75	617-624	620.5
	42	625.25	630.75	624-631	627.5
	43	632.25	637.75	631-638	634.5
	44	639.25	644.75	638-645	641.5
	45	646.25	651.75	645-652	648.5
	46	653.25	658.75	652-659	655.5
	47	660.25	665.75	659-666	662.5
	48	667.25	672.75	666-673	669.5
	49	674.25	679.75	673-680	676.5
	50	681.25	686.75	680-687	683.5
	51	688.25	693.75	687-694	690.5
	52	695.25	700.75	694-701	697.5
	53	702.25	707.75	701-708	704.5
	54	709.25	714.75	708-715	711.5
	55	716.25	721.75	715-722	718.5
	56	723.25	728.75	722-729	725.5
	57	730.25	735.75	729-736	732.5
	58	737.25	742.75	736-743	739.5
	59	744.25	749.75	743-750	746.5
	60	751.25	756.75	750-757	753.5
	61	758.25	763.75	757-764	760.5
	62	765.25	770.75	764-771	767.5
	63	772.25	777.75	771-778	774.5
	64	779.25	784.75	778-785	781.5
	65	786.25	791.75	785-792	788.5
	66	793.25	798.75	792-799	795.5
	67	800.25	805.75	799-806	802.5
	68	807.25	812.75	806-813	809.5
	69	814.25	819.75	813-820	816.5

* New channel 10 and 11 services will be placed +1MHz.

* Digital services can be offset +125KHz from centre channel.

* Stereo sub-carriers +242KHz from 1st Audio carrier.

* No new television services for channels 3, 4, 5, or 5A.

Typical Coaxial Cable Losses dB Per 100m

@ 20°C ± 1.8%/10°C

MHz	55	211	350	550	870	1000	1750
RG59	6.18	11.79	15.22	19.36	24.75	26.54	35.81
RG6	4.94	9.43	12.2	15.62	19.99	21.46	28.66
RG11	3.12	5.95	7.74	9.88	12.8	13.88	19.51

Suggested Analogue Vision Signal Levels

Antenna delivers:

35dBµV	Poor picture, must be masthead amplified.
45dBµV	Can be 100% with low noise masthead amp.
55dBµV	Not quite enough for 1 set, distribution amp. OK.
65dBµV	O.K. for 2-4 sets if splitter & cable quality good.

Arriving at the set:

55dBµV	Recommended minimum, allows for rain fade.
65dBµV	Recommended for best picture quality.
75dBµV	Recommended maximum signal level.
85dBµV	Too much signal, tuner overload possible.

Transmitted Vision to Sound Ratios

1st sound (L&R) -13dB from vision , 2nd (2xR) -20dB.

Signal to Noise Ratio Calculation

Noise figures show by how many decibels an amplifier will further reduce the Signal to Noise ratio of an antenna system. The Signal to Noise Ratio (S/N) is the difference between the level of noise and useful signal. Over the bandwidth of 1 TV channel, engineers consider it reasonable to say the Noise figure at 75Ω is 2dBµV. Then 50dBµV through an amplifier with a 4dB Noise figure gives a S/N of 50-(4+2) = 44dB.

With terrestrial signals, a S/N better than 46dB is considered noise free and gives very good picture quality. 37dB S/N shows noise in the picture that is visible but not annoying. A 30dB S/N gives a poor picture with clearly visible snow, but a 26dB S/N gives a picture that is predominantly noise and of little use.

Noise levels can be measured on any signal level meter by measuring the noise floor somewhere near the used channel.

Return Loss

Antenna systems work best when the impedance is the same at all points in the system. Impedance variations introduce signal reflections that reduce the efficiency of the distribution system. This reflected signal meets signal travelling in the opposite direction, causing standing waves.

Measured standing waves are known as Return Loss. It is the same as Voltage Standing Wave Ratio, abbreviated to V.S.W.R., or S.W.R. Poor Return Loss can cause a leading ghost, snowy pictures, destabilize an amplifier or the transmission line to radiate signal.

Poor Return Loss can be caused by any component in the distribution system. An ideal V.S.W.R. is 1:1 where no power is reflected, but this is seldom attained. In practice 1.5:1 is more common, with 2:1 an acceptable limit.

An important measurement that should not be overlooked, Return Loss or VSWR most certainly effects the result achieved by an antenna system and continues to be important in the delivery of Digital TV.

Return Loss = VSWR Table

dB RL	2	6	10	14	18	22	26	30	34	38	46
VSWR	8.7	3.0	1.9	1.5	1.3	1.2	1.1	1.07	1.04	1.03	1.01

Amplifier Max. Out. and Rules of Thumb

As more channels are amplified, an amplifier's maximum output level must be reduced to stop intermodulation products reducing picture quality. Broadband amplifiers are usually rated for maximum output with 2 equal channels of say 108dBμV. This is the figure to reduce according to the number of TV channels being amplified. Count 88-108MHz band 2 F.M. radio as 1 channel unless it is 10dB or more below the TV levels.

No. of channels 2 3 4 5 6 7 8 9 10
Reduction in dB 0 2.5 3.5 4.5 5 5.5 6 6.5 7

The noise an amplifier generates adds to the total noise in a system, so the maximum output level must be further reduced according to the number of amplifiers being used.

No. of amplifiers 1 2 3 4 5 6
Reduction in dB 0 3 4.5 6 7 7.5

EXAMPLE: Using an amplifier with a manufacturers maximum output rating of 108dBμV when amplifying 8 equal channels, the second amplifier should have it's maximum output level calculated $108 - (6+3) = 99\text{dB}\mu\text{V}$.

DiSEqC Implementation Level Minimums

LEVEL	DIRECT.	COMMANDS
Compatible	Tone Burst	Simple 2 state switch only.
DiSEqC 1.0	1 way	4 Comm. switches 1 repeat & Tone Burst.
DiSEqC 1.1	1 way	1.0 + 4 Uncomm. sw, 2 rpts & remote tune.
DiSEqC 1.2	1 way	1.1 + positioner commands.
DiSEqC 2.0	2 way	1.0 + LNB LO read & 1 repeat.
DiSEqC 2.1	2 way	2.0 + 4 switches, 2nd repeat & remote tune
DiSEqC 2.2	2 way	2.1 + positioner commands.
DiSEqC 3.0	2 way	2.2 + external bus control of master.

Level Conversion Table at 75 Ohms

dBμV	μV	dBm	pW	dBμV	mV	dBm	μW
25	17.8	-83.8	4.22	87	22.4	-21.8	6.68
27	22.4	-81.8	6.68	89	28.2	-19.8	10.6
29	28.2	-79.8	10.6	91	35.5	-17.8	16.8
31	35.5	-77.8	16.8	93	44.7	-15.8	26.6
33	44.7	-75.8	26.6	95	56.2	-13.8	42.2
35	56.2	-73.8	42.2	97	70.8	-11.8	66.8
37	70.8	-71.8	66.8	99	89.1	-9.8	106
39	89.1	-69.8	106	101	112	-7.8	168
41	112	-67.8	168	103	141	-5.8	266
43	141	-65.8	266	105	178	-3.8	422
45	178	-63.8	422	107	224	-1.8	668
47	224	-61.8	668	109	282	.2	1.06mW
49	282	-59.8	1.06mW	111	355	2.2	1.68
51	355	-57.8	1.68	113	447	4.2	2.66
53	447	-55.8	2.66	115	562	6.2	4.22
55	562	-53.8	4.22	117	708	8.2	6.68
57	708	-51.8	6.68	119	891	10.2	10.6
59	891	-49.8	10.6	121	1.12V	12.2	16.8
61	1.12mV	-47.8	16.8	123	1.41	14.2	26.6
63	1.41	-45.8	26.6	125	1.78	16.2	42.2
65	1.78	-43.8	42.2	127	2.24	18.2	66.8
67	2.24	-41.8	66.8	129	2.82	20.2	106
69	2.82	-39.8	106	131	3.55	22.2	168
71	3.55	-37.8	168	133	4.47	24.2	266
73	4.47	-35.8	266	135	5.62	26.2	422
75	5.62	-33.8	422	137	7.08	28.2	668
77	7.08	-31.8	668	139	8.91	30.2	1.06W
79	8.91	-29.8	1.06μW	141	11.2	32.2	1.68
81	11.2	-27.8	1.68	143	14.1	34.2	2.66
83	14.1	-25.8	2.66	145	17.8	36.2	4.22
85	17.8	-23.8	4.22	147	22.4	38.2	6.68

Pay TV or DVD Distribution Systems

It is practical to send the picture & sound from a Pay TV receiver to all TV's in the house. There are several ways to accomplish this, but careful thought must be given to channel planning and system design if it is to allow any channel to be viewed clearly on any TV at any time.

Most RF outputs are factory preset around channel 37 and are menu adjustable across the entire ch 28 to 69 UHF TV range.

To permit a VCR to record off-air channels, a small amount of incoming signal should be tapped off before the mixer to avoid creating a feedback loop. Laceys.tv FA1-12 or CD-141 couplers (page 21) will provide the VCR with off air signal with a hardly noticeable insertion loss of around 1dB.

As DVD's don't have modulators in them, an external modulator like Laceys.tv MD11P (page 53) is required. You may also need to consider DVD MacroVision security that can degrade DVD signal quality.

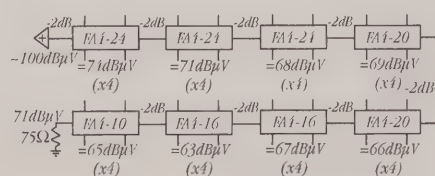
Mixing A splitter or power divider in reverse effectively superimposes any unwanted off air signals and noise etc. from the DVD or Pay TV box modulator, on to the signals you want in your system. Laceys.tv have a range of band or frequency selective mixing devices (page 23, 24) that offer high isolation, generally better than 30dB, and insertion loss of less than 1dB, that can make the ideal mix. For example, M45/36 will mix signal from an off-air antenna up to ch 36 with ch 40 upwards. If a number of set top boxes are required, their RF outputs can be combined using an F type splitter in reverse (page 20) and the combined signal fed into a band selective mixer.

Another solution is the JH7RP45AU distribution amplifier (page 48) which provides selective inputs for all VHF, bands 4 and band 5. Grossly unbalanced signal levels can be adjusted with attenuators (page 26). Ideally multiple set top boxes and off-air channels should be combined with a single channel amplifier system like Lacey's KF series filters, although cost sometimes dictates a band selective solution like those described above.

With the typical 65-70dBμV from a VCR's modulator and 70dBμV of off-air signal, it is possible to run a VCR system to 4 points passively using an FA1-12 or CD-141 coupler and M45/36 mixer, with the total loss in the 2 devices <2dB. No amplifier is necessary!

Distribution and MATV

A simple amplifier like Laceys.tv AI900 (p.46) feeding 6 x CD-4..., FA4... or a selection of Multi -b Taps (p.21) from the centre, with 10 metres of RG6 trunk cable between each coupler - can run 24 outlets spread over 60 metres. That's 48 outlets over the whole system. Bigger amplifiers will do even more. Almost any recent amplifier will give 100dBμV out. A system design for 32 outlets spread over 80 metres of RG6 is illustrated below.



Try the Laceys.tv MATV design service!

Quality cable and couplers, 75Ω terminated trunk lines (FC7014 p.23), and there isn't much you can't do!

Digital Terrestrial Television transmissions commenced in Australia's capital cities in January 2001 with simulcasting of both Standard and High Definition programs in the European DVB-T standard using 7MHz channels and about 8,000 carriers.

Set Top Box receivers about the size of a satellite TV receiver (see page 65) or a small DVD player are required. *idTV*, integrated digital TV's have not been widely accepted, possibly because few TV manufacturers have engineered DVB-T receivers that fully meet the Australian requirements.

The nature of digital is that people will receive perfect pictures - or no picture. If a channel is close to picture loss, the picture may drop out without warning simply with a change in the weather. Murphy's Law will ensure this occurs at the most inconvenient time, so as an industry we need to be equipped. Unaohm true BER meters provide soundly referenced measures that can be relied on whether signal quality is High or Low.

In the capital cities, antennas need to be equally effective over all of channels 6 to 12 and 28 to 36. Many antennas more than 4 years old give unreliable DTTV reception on channels 12 or 6. This is not a surprise if you consider many antennas were designed to work across channels 7 to 10, and years before that only channels 7 and 9.

Impedance match is a more important issue with digital than analogue, with baluns singled out as a weak point. The greater the mismatch, the more impulse noise is induced into an antenna system. Cable and connector quality within a TV distribution system are of greater importance with Digital.

Fracarro has developed a new Log Periodic TV antenna LP34HV (page 3) that offers an ideal DTV receiving solution because of its flat frequency response. The new band 3 BLV6F antenna (page 6) is an excellent new deep fringe area option.

Amplifiers require less gain for Digital than analogue because of the small amount of distortion and noise that a high power amplifier adds, that might have been tolerated by an analogue receiver, will not be tolerated by a Digital receiver.

Single Frequency Networks, spectrum saving technology unique to 8k DVB-T, are already relieving pressure on available channels in several Australian markets. SFN's use the same channel for several transmitters - as long as the program is 100% the same. In the Melbourne area DVB-T from Frentree Gully, Selby, Upwey; South Yarra, Arthurs Seat and Rosebud South share the same channels in a Single Frequency Network.

To learn more about DVB-T, a helpful tutorial can be found on line @<http://www.laceys.tv/dtv.htm>



TechTip. DVB engineering group logo, authors of Terrestrial, Satellite and Cable Digital TV technologies.

Buying an instrument for Digital has to be more than a hit or miss affair. Yet, based on some of the information available, it can be little more than a lucky dip.

What is it you want to measure?

Modulation Error Ratio

Digital Channel Power

Bit Error Rates

Reflections

Measuring signals and viewing pictures can deceive. With perfect pictures, total loss of service can be close at hand! Forward Error Correction Systems work continuously in digital transmission systems to keep received picture quality perfect. FEC makes field Signal *Quality* measurements not just possible, but *more important* than signal level measurements!

Modulation Error Ratio is the Digital Signal Quality measure with the lot, that covers the entire range of signal qualities, takes into account all signal impairments, and is repeatable. Don't confuse MER with analogue Carrier to Noise ratio, a general signal quality indicator that can not accurately represent Digital Signal Quality.

Bit Error Ratios are useful quality measures of a Digital data stream, complicated by the need to measure at 3 points before the full Signal Quality position is clearly understood.

Digital Channel Power is the measure of digital signal level, but it gives no indication of Signal Quality. DCP is more complicated to measure than traditional Analogue Peak Power.

Reflections are mostly no problem for Digital, but there are limits to what receivers can handle. By seeing the reflections on an AER display, the antenna can be positioned to minimise them.

Unaohm's Adaptive Equalizer Response function is helpful in obtaining the most stable Digital signal and is particularly helpful with Single Frequency Networks. It displays echo values across time and distance, showing strength and when signals are outside the Guard Band and most likely to contribute to picture instability. 70 year old instrument manufacturer Unaohm is the first to offer an Adaptive Equalizer Response function in an installer instrument.

Unaohm Digital Signal Quality measurement instruments are ready for Satellite QPSK, Terrestrial COFDM and Cable QAM. The new T40 is Unaohm's first handheld COFDM Digital Terrestrial True BER Signal Quality instrument. Not only does it incorporate Digital and Analogue measurements in one small instrument, but the measurement systems are among a tiny group that have been approved by Foxtel in rigorous testing for MDU work. At the leading edge in terms of proper measurement *and* value for money, more information appears on pages 69 and 70. Talk to us, and we'll make sure the instrument you get will do what you need!

Level Margin, the idea: A simple means of testing Digital Signal Quality of a receiving installation is to measure the margin above Lock or picture failure. Engineering principles dictate signal level should be at least 9dB and preferably more than 20dB above Lock.

In practice: Insert a constant 75Ω variable attenuator, set for maximum attenuation, (Laceys.tv's AT7520M) between the antenna and Set Top Box. Check pictures on all channels. Reduce attenuation until the worst channel Locks. The amount of attenuation required indicates how much Level Margin your system has. Due to the impedance sensitive nature of Digital, a *pot in a box* will not do!

Satellite Television & Internet

Ku band Dual Polarity Single Output LNBF's

Low phase noise, improved noise figure, excellent local oscillator stability, high isolation 13/18 V horizontal / vertical switch, compact shape. KFJ21 includes a 22KHz band switch. A better solution for individual and multiple satellite receiving systems. Meets ETSI standard (CE Certified).

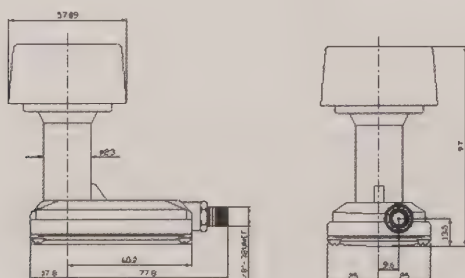


KFM21 NEW Optus frequency range R48
 Local Osc. Frequency: 10.7 GHz
 Input Frequency Range: 11.7-12.75GHz
 Output Frequency Range: 1,000-2,150 MHz

KFJ21 International frequency ranges R48

	Low Band	High Band
Local Osc. Frequency:	9.75 GHz	10.6 GHz
Input Frequency Range:	10.7-11.7	11.7-12.75 GHz
Output Frequency Range:	950-1950	1,100-2,150 MHz

Noise Figure: 0.7 dB(Typ.)
 F/D Ratio: 0.6
 Input Reflector Type: Offset
 Cross Polarity Isolation: 22 dB(Min.) 28 dB(Typical)
 Conversion Gain: 50 dB(Min.) 62 dB(Max.)
 Gain Flatness: ± 0.5 dB per 27 MHz
 L.O. Frequency Stability: @25°C ± 1 MHz
 over -30°C~60°C ± 3 MHz
 Local Osc. Phase Noise: 1 KHz Offset -60 dBc/Hz
 10 KHz Offset -80 dBc/Hz
 100 KHz Offset -100 dBc/Hz
 Output Power @1dB Compression Point: 0 dBm (Min.)
 Output Return Loss: 7.5 dB
 Output Connector: F type Female 75 Ω
 Supply Voltage: 11.5-19V DC
 Polarity Switching Vertical: 11.5 - 14.2 V DC
 Horizontal: 15.8 - 19 V DC
 Current Consumption: 110 mA (Typical) 150 mA (Max.)
 Band Switch KF-J21: Low 0 KHz
 High 22 KHz ± 4 KHz continuous.
 Operating Temperature: -30°C to +60°C



Ku band Dual Polarity Dual Output LNBF's

Delivers both Horizontal and Vertical polarities simultaneously. High Isolation between polarities, Low Noise, excellent Local Oscillator stability, Weatherproof O-Ring and Gasket seal inside outer housing. Meets ETSI standard (CE Certified).

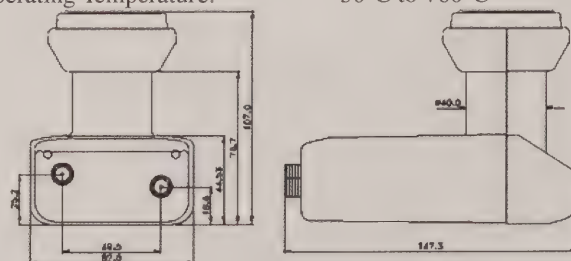


KFH22 Optus frequency range R238
 Local Osc. Frequency: 11.3 GHz
 Input Frequency Range: 12.25-12.75GHz
 Output Frequency Range: 950-1950 MHz

KFJ22 International frequency ranges R298

	Low Band	High Band
Local Osc. Frequency:	9.75 GHz	10.6 GHz
Input Frequency Range:	10.7-11.7	11.7-12.75 GHz
Output Frequency Range:	950-1950	1,100-2,150 MHz

Noise Figure: 0.7 dB(Typical)
 F/D Ratio: 0.6
 Input Reflector Type: Offset
 Cross Polarity Isolation: 22 dB(Min.) 28 dB(Typ.)
 Conversion Gain: 50 dB(Min.) 62 dB(Max.)
 Gain Flatness: ± 0.5 dB per 27 MHz
 L.O. Frequency Stability: @25°C ± 1 MHz
 over -30°C~60°C ± 3 MHz
 Local Osc. Phase Noise: 1 KHz Offset -60 dBc/Hz
 10 KHz Offset -80 dBc/Hz
 100 KHz Offset -100 dBc/Hz
 Image Rejection: 40 dB(Min.)
 Output Power @ 1 dB Compression Point: 0 dBm (Min.)
 Output Return Loss: 7.5 dB
 Output Connector: F type Female 75 Ω
 Supply Voltage: 11.5~19V DC
 Current Consumption: 110 mA (Typical) 150 mA (Max.)
 Polarity Switching Vertical: 11.5 - 14.2 V DC
 Horizontal: 15.8 - 19 V DC
 Band Switch KFJ22 Low: 0 KHz
 High: 22 KHz ± 4 KHz continuous
 Operating Temperature: -30°C to +60°C



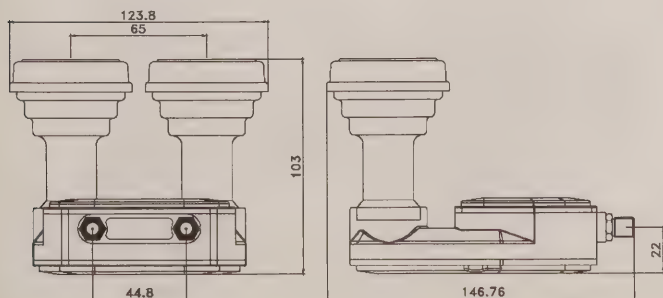
Dual Ku band Monoblock LNBF 6°

Unique double feedhorn provides simultaneous access to 2 satellites 6° apart thanks to an integrated 2 output DiSEqC 2.0 switch. Low phase noise, improved noise figure & high isolation. Easier to set up than Two-LNBs. Meets ETSI standard (CE Certified).



KFDJ22 International frequency ranges. R238.

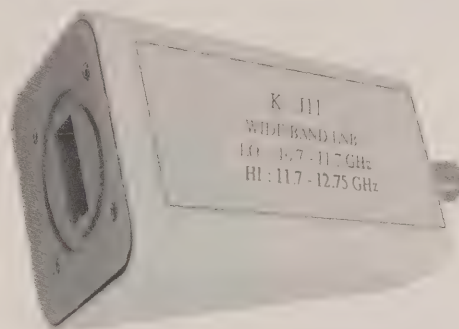
	Low Band	Hi Band
Local Osc. Frequency:	9.75 GHz	10.6 GHz
Input Frequency Range:	10.7-11.7	11.7-12.75 GHz
Output Frequency Range:	950-1,950	1,100-2,150 MHz
Noise Figure:	.7 dB (Typical)	
Input Connectors:	F/D Ratio 0.6	
Input Reflector Type:	Offset	
Cross Polarity Isolation:	20 dB (Min.)	28 dB (Typ.)
Conversion Gain:	50 dB (Min.)	62 dB (Max.)
Gain Flatness:	±0.5 dB per 27 MHz	
Local Osc. Freq. Stability	@25°C: ±1 MHz over -30°C to +60°C ±3 MHz	
Local Osc. Phase Noise:	@ 1 KHz Offset -60 dBc/Hz @ 10 KHz Offset -80 dBc/Hz @ 100 KHz Offset -100 dBc/Hz	
Output Power (@ 1dB Gain Compression Point)	0 dBm (Min.)	
In Band Harmonic Distortion	-58 dB (Max.)	
Output Power @ 1 dB Compression Point:	0 dBm (Min.)	
Output Return Loss:	>7.5 dB	
Output Connector:	F type Female 75Ω	
Supply Voltage:	11.5 - 19V D.C.	
Current Consumption:	200 mA (Typ.) 230 mA (Max.)	
Polarity, Band & Satellite Selection:	DiSEqC Command Table	
Operating Temperature:	-30°C to +60°C	



KU BAND LNB's & FEEDS

Single Polarity Ku band LNB's. Better noise figures!

Universal LNB with voltage controlled band switch.
WR-75 wave guide input supplied with O ring weather-seal.
Low phase noise enhances Digital reception, suitable for individual systems, motorised dishes or Satellite MATV.

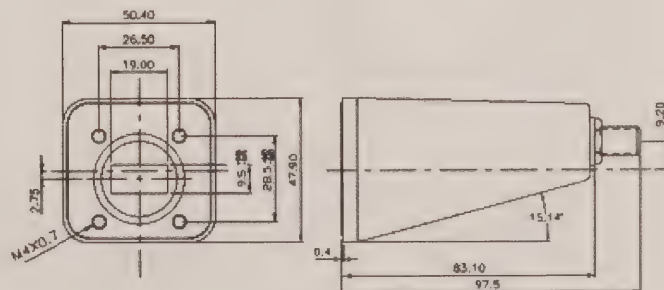


KH11 Optus frequency range R118.

Input Frequency Range:	12.25-12.75GHz
Output Frequency Range:	950-1,450 MHz
Local Oscillator frequency:	11.3GHz

KJ11 International frequency range R118.

	Low Band	High Band
Input Frequency Range:	10.7-11.7	11.7-12.75 GHz
Output Frequency Range:	950-1,950	1,100-2,150 MHz
L.O. Frequency:	9.75 GHz	10.75 GHz
Band Switch:	15.8-20 V DC	11.5-14.2 V DC
Noise Figure:	0.7 dB	(Typical)
Input wave guide:	WR75 type	
Conversion Gain:	50dB (min.)	62dB (max.)
Gain Flatness:	±.5dB per 27MHz	
Range Gain Variation:	6dB peak to peak	
Local Osc. Freq. Stability	@25°C ±1 MHz over -40° to +60°C ±3 MHz	
Local Osc. Phase Noise	@ 1 KHz Offset -60 dBc/Hz @ 10 KHz Offset -80 dBc/Hz @ 100 KHz Offset -100 dBc/Hz	
Output Power @ 1 dB Compression Point:	0 dBm (Min.)	
Output Return Loss:	7.5dB minimum	
Output Connector:	F type Female 75Ω	
Supply Voltage:	11.5 - 19V D.C.	
Current Consumption:	150 mA (Max.)	
Operating Temperature:	-40°C to +60°C	



KFH01

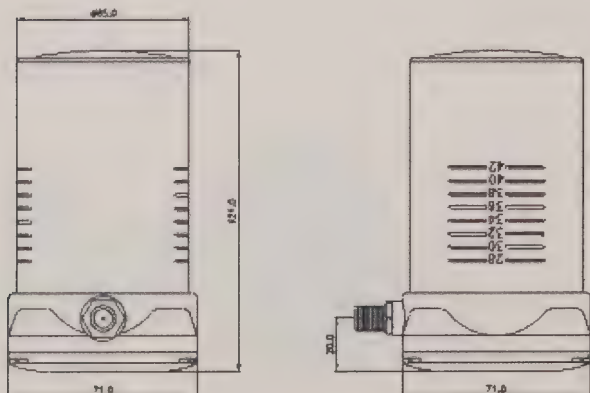
Ku band feedhorn,
WR75 port.
Return Loss: 18dB
typical.
Size: 56 x 56 x
85mm
R24.



CFD21A Extended C band LNBF

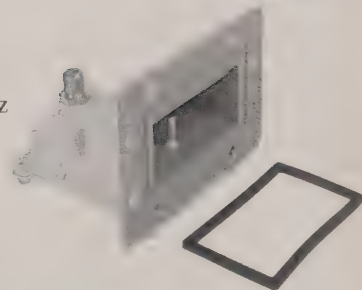
R162.

Input frequency range:	3.4 - 4.2GHz
Output frequency range:	950 - 1,750 MHz
Local Oscillator freq.:	5,150 MHz
Noise Temperature:	20°K typical
F/D Ratio:	0.28-0.42 adjustable
Cross Pol. Isolation:	20dB typical
Conversion Gain:	65dB typical 60dB min.
Gain Flatness:	±1dB over 36MHz
L.O. Frequency Stability:	@25°C ±1MHz over -40° to +60°C ±2.5MHz
Local Oscillator Phase Noise	
@ 1KHz Offset	-70dBc/Hz
@ 10KHz Offset	-90dBc/Hz
@ 100KHz Offset	-105dBc/Hz
Image Rejection:	40dB minimum
Output Power @ 1dB compression point:	0dBm (min.)
Output Return Loss:	7.5dB
Output Connector:	F type Female 75Ω
Current Consumption:	150mA typical
Polarity Switch: Vertical	11.5 - 14.2V DC
Horizontal	15.8 - 19V DC
Operating Temperature:	-40°C to +60°C

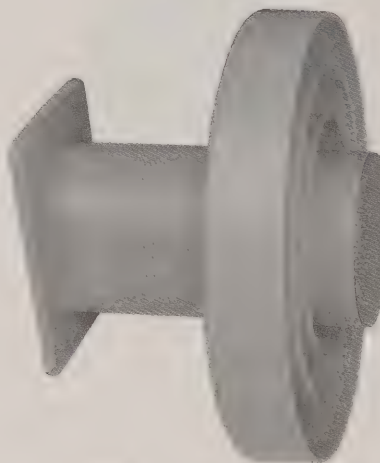


EHC-1600

LNB, C band, Digital Ready.
R.F. Input: 3.7-4.2 GHz
I.F. Out: 950-1,450 MHz
L.O.Freq: 5,150MHz
Noise: 20°K-25°K
Gain: 65dB typical
Flatness: ±3dB
Surge Protected: Yes
Power: 12-20V DC
Current: 150mA

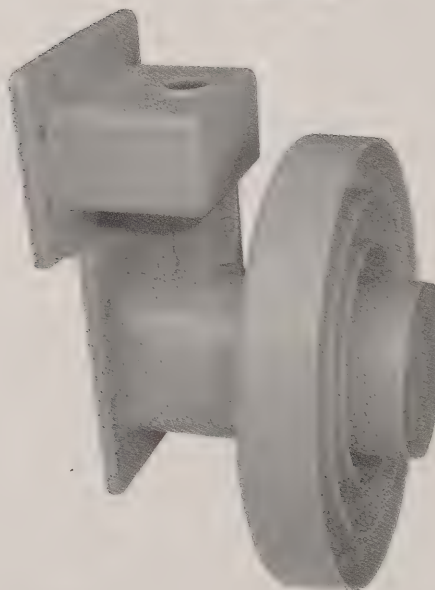


R86.



CFH-01

C band scalar Feed
Horn. Single polarity,
single LNB.
F/D range: .33-.45
Return Loss: 18dB
typical R39.



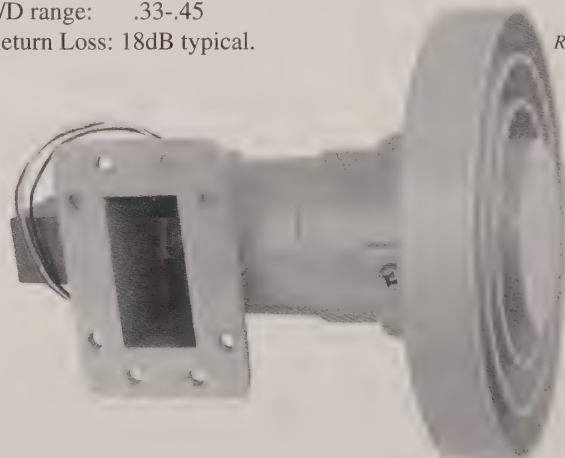
CFH-02 C band
orthomode scalar
Feed Horn,
separates H&V
polarities,
permitting two
LNB's to function
simultaneously
from the same
satellite.

F/D range:
.33-.45
Return Loss:
18dB typical
R104



CFH-04 C band scalar Feed Horn. Motorised polariser (H V & skew) and Dielectric Insert (circular polarities) included.

F/D range: .33-.45
Return Loss: 18dB typical.



R159.

Satellite Dish Antennas for C and Ku bands

Four section, 16-Panel, polar steerable, prime focus dish antennas with quad feed supports. Aluminium mesh reflector material, all electrostatic powder coated. Operating frequency range: 3.20 - 12.75 GHz C or Ku bands. Substantial LNB and feedhorn cover included with each dish. *Feed and LNB sold separately!*



AI2.3

Diameter: 2.27m
Focal Length: 92.5cm
Depth: 34.8cm
F/D Ratio: 0.40
Gain C-Band: 39.0 dBi
Gain Ku-Band: 47.0 dBi
Net Weight: 9 Kg
Net Volume: 0.1860 CBM



LNB sold separately

PENTA 85 Precision design equal in gain to premium quality 85cm and common 90cm offset dishes, Ku band Penta's unique five sided shape dramatically reduces side lobes common in small dishes. Made from powder coated steel (aluminium by special order) and supported on a strong steel mount. Ships in cartons of 10 pieces to minimise shipping costs. *R158.*

DIGIT 65 65cm version of the Penta 85. Quality from top to toe, Digit 65 outperforms most 65cm dishes whilst looking different. Powder coated steel construction supported on an easy to use steel mount. Ships in cartons of 10 pieces to minimise shipping costs. *R118.*

SATELLITE DISH ANTENNAS & MOUNTS

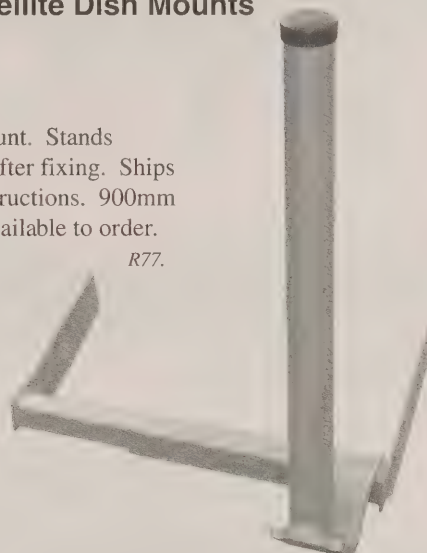
SPECIFICATIONS	Penta Digit	Penta 85
Dimensions mm:	624 x 624	775 x 775
Offset angle:	22.3°	22.1°
Efficiency:	≥70%	≥70%
Gain @ 10.95GHz:	36.5dB	39dB
Cross Polariz.:	>37dB	>38dB
Noise Temp. @30° elev.	40°K	40°K
F/D Equivalent:	.7	.7
Beamwidth @ 3dB:	3°	2.2°
Accepts LNBF Ø mm:	23-28, 40 & 60;	23-28, 40 & 60
Attaches to poles Ø:	35 - 80mm	35 - 80mm
150Km/h wind load:	53kg	81kg

Satellite Dish Mounts

EZYGMOUNT

45mmØ rigid dish mount. Stands 600mm from gutter, rafter fixing. Ships with screw kit and instructions. 900mm EZY-G/MOUNT-L available to order.

R77.



SATWM

Wall Mount. Mounts on timber, brick, concrete or almost any vertical wall surface with sleeve anchors or coach screws etc. (not included). Simple yet extremely functional for dishes up to 90cm.

R36.



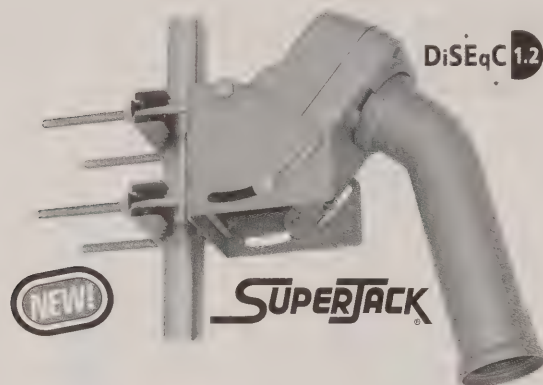
SATFM

Flexi Mount. Roof mount with stay bars that adjust in length between .8 and 1.4 metres, to suit your job. Fixing kit includes self tapping screws to lock stay bars, metal roof screws and weather proofing washers. Stay bars shown at minimum length and without locking screws.

R60.

Dish / Antenna Positioner DiSEqC 1.2

SJMM Improved complete DiSEqC positioner. Interprets DiSEqC 1.2 instructions to position any dish up to 1.2m in diameter. H to H mount with high resolution hall effect sensor. Manual East West buttons simplify set up. Connects directly between DiSEqC 1.2 receiver (or optional interface Vbox) and LNB. Up to 75mmØ mount, 55mmØ dish mount. *R260.*



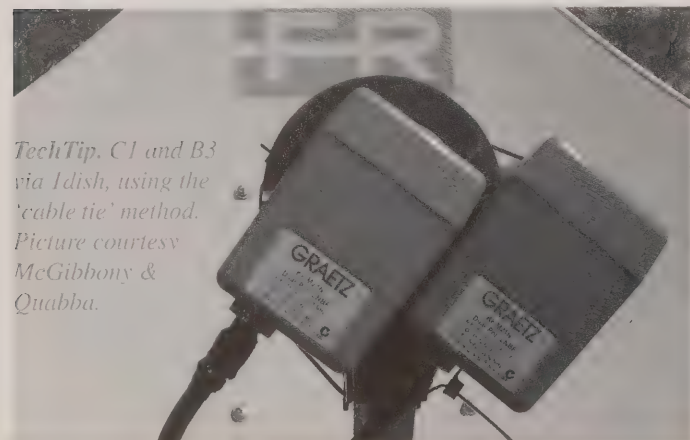
SJVB DiSEqC positioner interface box. Enables any DiSEqC 1.2 equipped receiver to control a bigger dish using a Linear Actuator. Stores up to 48 positions. Dishes easily fine tuned. Software and hardware dish travel limits. Mains powered, 36V DC @ 90W max. output, overload protected. *R130.*



SJA 24 inch (61cm) stroke length Linear Actuator with Reed Sensor. Works with SJVB or analogue positioner interfaces to reliably move a bigger dish across your sky. *R200.*



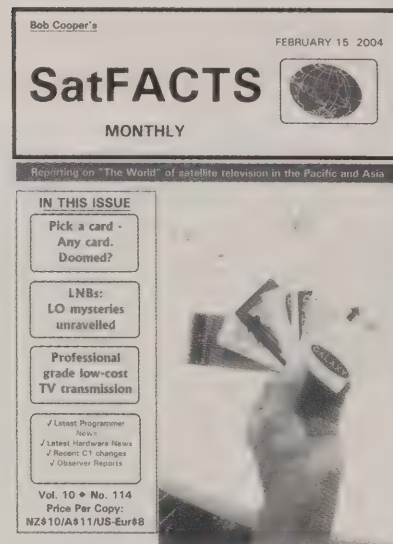
TechTip. save time installing your positioner. Ensure dish mount is vertical - East West and North South - using a reliable level, before attempting installation.



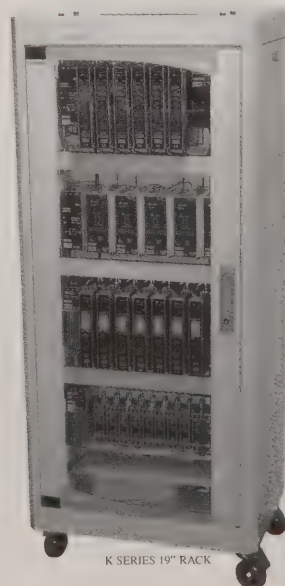
TechTip. C1 and B3 via 1dish, using the 'cable tie' method. Picture courtesy McGibbony & Quabba.

Technical Books

OSatFACTS12 Satellite & Terrestrial TV monthly magazine for Australia and New Zealand. Feature articles on hot topics and regular columns. The industry reference you can't afford to be without, published by industry pioneer Bob Cooper. A4 in size, available by subscription only. 12 editions mailed directly. *P108.*



0-9585271-1-3 TV Across Australia
The travellers and technicians guide to TV in every corner of Australia. More Maps of better quality. Analogue & Digital channels included with space for new services as they happen. The reference for technicians and travellers, includes transmitters, areas and TV networks. *P26.*

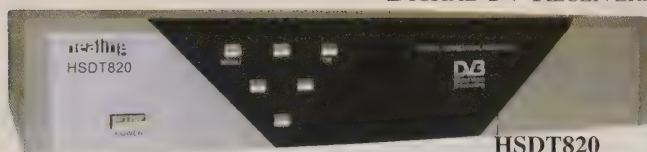


**HSDT820**

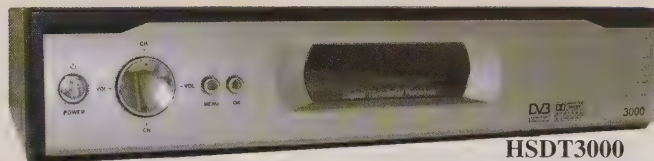
Quality Standard Definition DVB-Terrestrial receiver. New Menu system, features Closed Captions, Teletext, Logical Channel Numbering, Last Channel start-up, RS232 port, games, etc. S-VHS and Composite video, RF, Optical and Coaxial SPDigitalIF (5.1) and RCA anal. audio outputs. Mains switch.

**HSDT3000**

Top shelf Standard Definition DVB-Terrestrial receiver that gives better results from weaker signals, with full compliment of output options. SCART loop with RGB, S-VHS and Composite video, RF, Optical SPDigitalIF (5.1) and RCA analogue audio outputs. Switch Mode supply.

**HSDT820****SD terrestrial**

Dimensions: H 55mm x W 290mm x D 225mm.

**HSDT3000****SD terrestrial**

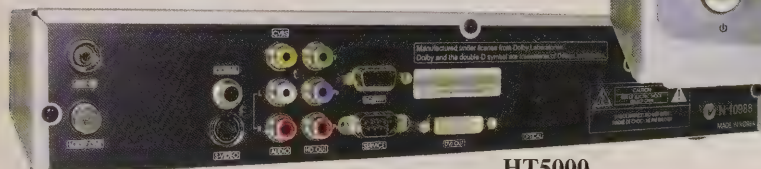
Dimensions: H 65mm x W 310mm x D 210mm.

**DVBT8866HD**

SLIM High Definition DVB-Terrestrial receiver. DVI, VGA, YPbPr, S-VHS and Composite video with Optical and Coaxial SPDigitalIF (5.1) and RCA analogue audio outputs. Manual resolution selection and simple menu structure simplify installation. Switch Mode supply. Low cost HDTV!

**DVBT8866HD****HD terrestrial**

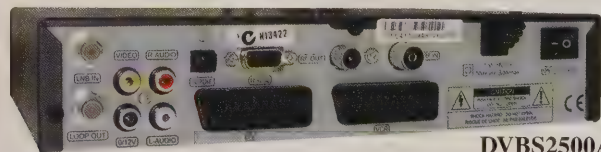
Dimensions: H 49mm x W 420mm x D 280mm.

**HT5000**

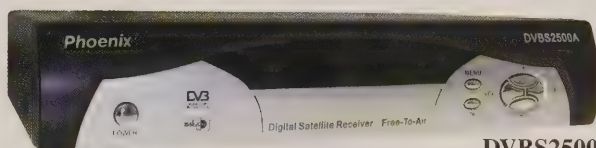
Quality High Definition DVB-Terrestrial receiver with brilliant on screen graphics. A full compliment of output options include DVI, VGA, YPbPr, S-VHS and Composite video with Optical and Coaxial SPDigitalIF (5.1) and RCA analogue audio outputs. Closed caption and Teletext services. Mains switch.

**HT5000****HD terrestrial**

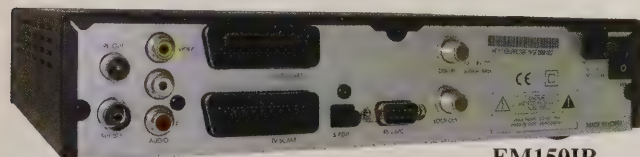
Dimensions: H 65mm x W 360mm x D 270mm.

**DVBS2500A**

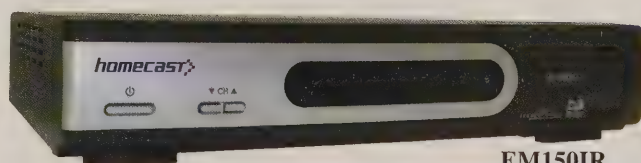
Free To Air DVB-Satellite receiver. SCART loop with RGB and Composite video, RF, Composite video with Optical SPDigitalIF (5.1) and RCA analogue audio outputs. 5000 channel memory, pre-programmed! 16:9 and 4:3, Includes DiSEqC 1.2 positioner. 2-45Ms/s. Switch Mode supply. Mains switch.

**DVBS2500A****Free To Air satellite**

Dimensions: H 55mm x W 260mm x D 195mm.

**EM150IR**

IRDETO encryption and FTA DVB-Satellite receiver. SCART loop with RGB and Composite video, RF, Composite video with Optical SPDigitalIF (5.1) and RCA analogue audio outputs.

**EM150IR****IRDETO & FTA satellite**

Dimensions: H 60mm x W 220mm x D 225mm.

Includes Teletext, 4000 channel 1000 transponder memory, 16:9 and 4:3, DiSEqC 1.2 and Teletext. 1-45Ms/s. Mains switch.

AURCRD Optus Aurora IRDETO conditional access card.

Cable Installation Aids

MAGICSTRIP

Push up wall cavity with cable taped to one end. Bright yellow colour easy to locate. Simply pull to install cable. 3.6m long x 15mm x 4mm. Store in side of extension ladder or conduit to keep flat. R8.



RT-3 3m long x 6mmØ. R38.

RT-6 6m long x 6mmØ. R78.

RoddyThin handy cabling aid. One piece round 6mmØ fibreglass rod. Strong enough to help clear blocked cavities etc. Easy to see yellow colour. Coils for carrying, straightens with minimal coil memory. By removing about 10cm of sheath and dielectric from coax, wrapping the centre wire in a spiral around one end, pulling the braid over the top and then taping the joint, makes RoddyThin a handy pull through tool that is



little more than the diameter of most TV coax!

CMSRODS Easy to carry cabling aid. 1.5m fibreglass rods threaded

to allow linkage end to end. Price per 1. R39.

CMS-HOOK Hook screws onto male CMS-Rod. R18.8

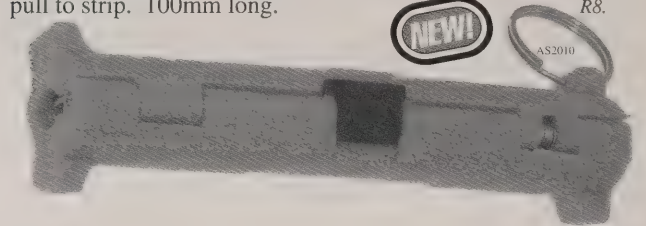
CABRL32 NEW 32mm cable drum roller. Dispense cable from drums up to 350mm wide and 650mm in diameter, or several drums at once. Adjustable drum guides, stable on any flat surface.

R58.

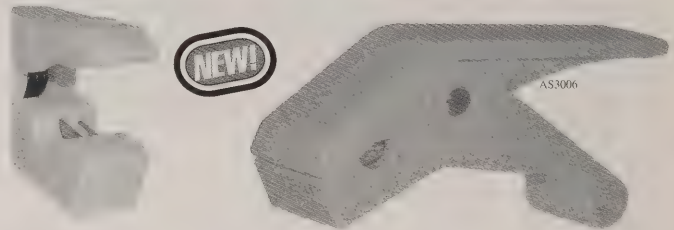


Coax Stripping Tools and Blades

AS2010 Round cable stripper. Blades at both ends, spring loaded with locking mechanism. Rotate to cut insulation and pull to strip. 100mm long. R8.



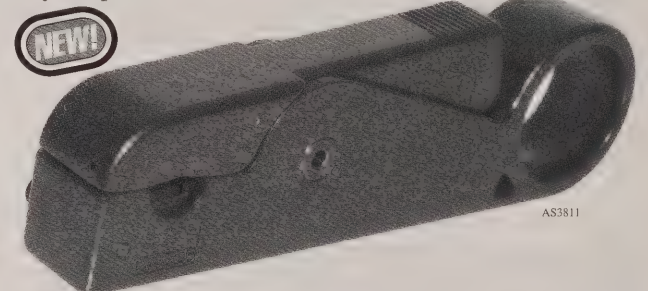
AS3006 Preset 2 blade stripper for RG6 and RG59. Bright Yellow colour makes it harder to lose. 82mm long. R19.



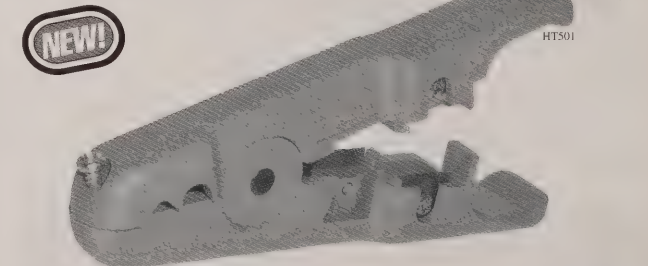
AS3106 Popular 2 blade rotary stripping tool with rollers and scrap ejectors. Suits RG6, RG59 or any cable between 4.9 and 7.5mmØ. 108mm long. Blister packed. R36.



AS3811 BIG cable 3 blade stripper for RG11, RG213 etc. 4.9mm to 11mmØ. Solid metal construction promises years of use. Includes rollers and auto. scrap ejectors. Hex Key adj. Hex Key & Spare Blades incl. 122mm long. Blister Packed. R52.



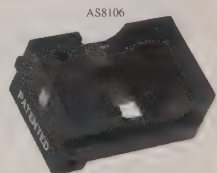
HT501 Universal cable stripper for round cables up to 9.5mmØ, multi conductor round and flat cables. 100mm long. R39.



HT3321 HT332 blades, 2 x sets per pack. R8.8

HT3121 HT312S blades, 2 x sets per pack. R8.8

AS8106 AS3106 blades, pre-set cartridge. R9.8

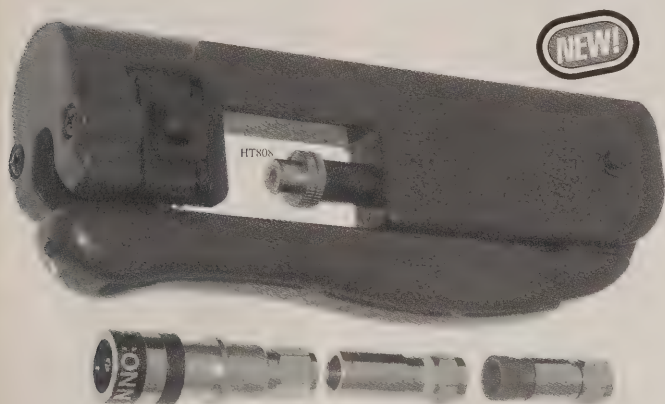


Professional Crimp Tools

HT807 Linear compression connector tool adjustable, 19cm long. *Suits RG6, RG59 connectors etc.* R69.

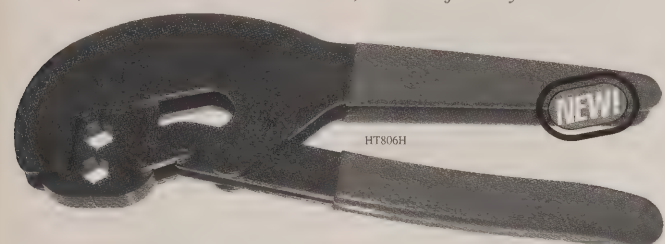


HT808 Linear compression tool, Heavy Duty. Adjustable to suit almost any compression type connector. 17cm long. *Suits RG59, RG6, RG11 connectors etc.* R118.

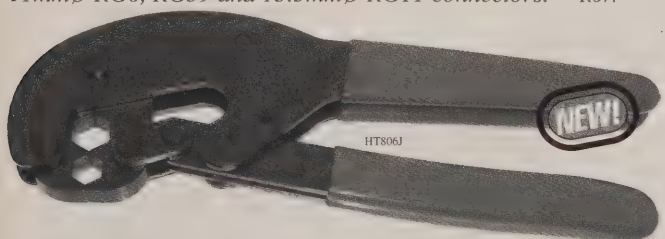


HT106A Hexagon crimp tool Heavy Duty, 23cm long. jaws: 6.48mm/.255", 5.4mm/.213", & 1.72mm/.068". *Suits BNC conn. etc. that require centre pin crimp.* R67.

HT806H Hex. crimp tool Heavy Duty, 23cm long. Strong laminated jaws: 9.12mm/.360", 8.2mm/.324". *Suits 11mmØ & 9.5mmØ RG6 & RG59 connectors, as used for Pay TV.* R67.



HT806J Hexagon crimp tool Heavy Duty, 23cm long. Strong laminated jaws: 12.0mm/.472", 9.18mm/.361". *Suits 11mmØ RG6, RG59 and 13.5mmØ RG11 connectors.* R67.



HT507 Radial compression tool, 23cm long. High RF quality thanks to cone shape. Simple to use with easy latch mechanism. *Suits RG6 and RG59 radial connectors.* R119.

**F Connector Reach Driver**

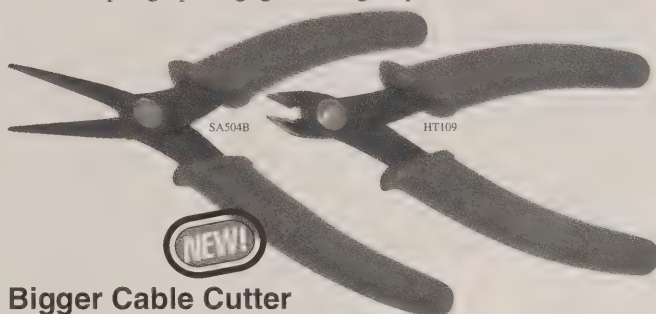
HT2206 Access to F connectors in tight areas. Also assists fitting F connectors to cable. R19.

**F Connector T Tool**

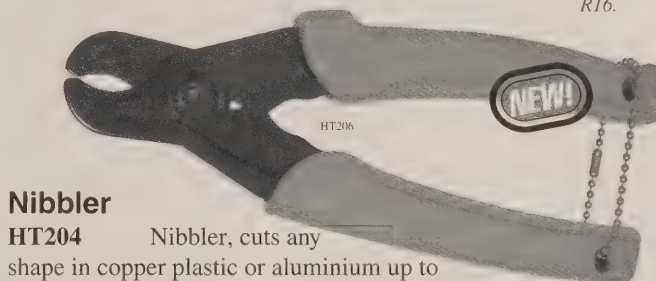
HT224 T Tool, provides substantial grip and leverage for fitting F connectors. Saves your skin for better things. R11.

Mini Pliers **SA504B** Mini Pliers, 14cm long. Insulated handles, spring opening, serrated jaws hold on tight. R11.

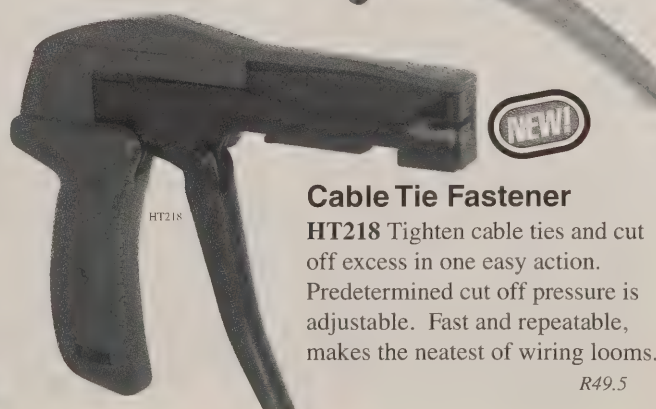
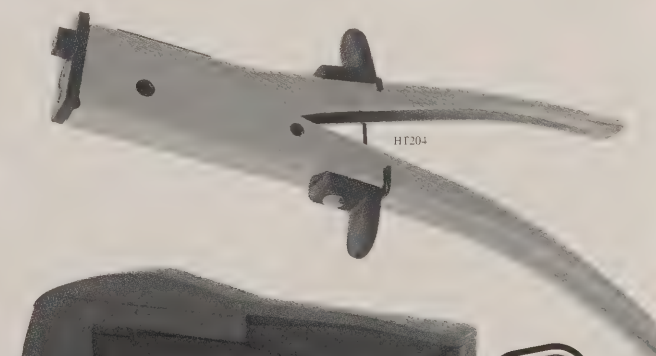
Mini Cutter **HT109** Mini Cutter, 13cm long. Insulated handles, spring opening, great in tight spaces. R11.

**Bigger Cable Cutter**

HT206 Cable cutter 15cm long, for copper cable up to 9mmØ. Insulated handles, spring opening with closed lock. R16.

**Nibbler**

HT204 Nibbler, cuts any shape in copper plastic or aluminium up to 18 gauge. Handy for car radio installation and cutting light steel appliance cabinets. R26.

**Cable Tie Fastener**

HT218 Tighten cable ties and cut off excess in one easy action. Predetermined cut off pressure is adjustable. Fast and repeatable, makes the neatest of wiring looms. R49.5

**YX-360**

General purpose multi-meter. DC Volts, AC Volts, Resistance and Current ranges. Analogue meter movement easier to interpret. Applications include cable continuity, LNB and mast amp voltage and current consumption etc. Test leads included. Measures up to 1000V AC. *Caution! Mains Voltages can risk personal safety.*

CT001AB AF Cable

Tracer set - the easiest way to find a lost cable, a single cable in a bundle or match cable ends hundreds of metres apart. Connect the Generator's red alligator clip to one conductor at one end. Move Tracer near opposite end until warble tone is heard from the Tracer and/or the LED glows.

- Silent Mode to calm nearby office workers.
- Line polarity and ring detect modes.
- Includes carrying case.

**TC870**

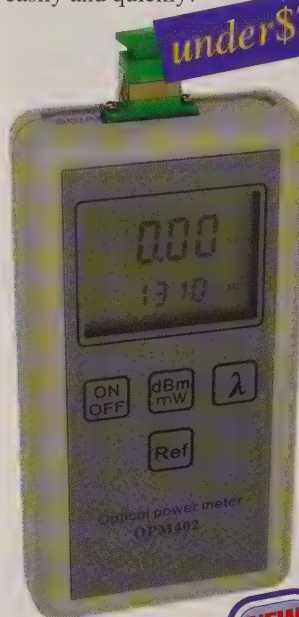
Now you can afford to measure signal levels. This 46 - 870MHz Signal Level Meter also measures the difference between Vision and Audio carrier levels, Tilt between channels, demodulates audio, and can even log your measurements for later. Australian and New Zealand channel plans are factory stored or enter frequency via keyboard. Measures in dBμV or dBm. Ships with protective field case. Measure TV signals, easily and quickly!



under \$700.

NEW!

OPM402 Handheld Optical Power Meter for singlemode and multimode 1100-1600nm applications. Selectable 1310 or 1550nm verifying point, SC/APC input connector, LCD display. dBm or nW with -70 to +5dBm range @ 1310nm. Simple to operate, with auto shut off and low battery indicator.



NEW!

**TX2001**

Time Domain Reflectometer. Graphic and distance display of cable faults. Radar for all 2 conductor metal cable: coax, twisted pair and even flat cables. Easy to use, 5 auto select ranges can see beyond 3km. 20% - 99% Velocity Factor. 50Ω, 75Ω or 100Ω ranges. Typical Velocity Factors and Fault Traces on the back of each unit. Includes instructions, tool belt case and clip on test lead. Picture shows TX2001 having read 305m of RG6.

NEW!

SAT-BUSTER

Simplify Satellite dish positioning with simultaneous indicative measurement of Noise Margin (MER) and Digital Channel Power. The most accurate way to optimize rain fade margin, SAT-BUSTER delivers better service stability than Carrier to Noise or Crosspole. Lightweight SAT-BUSTER is ready to break the back of your day to day installation workload.



FOXTEL
APP. F30034

FRACARRO

Unaohm's family of handheld True BER meters is now complete. Features include expanded Histogram, Spectrum and Expanded Spectrum with a choice of Hold functions that can help identify elusive faults. Includes protective rubber holster. True BER, without the high price tag.

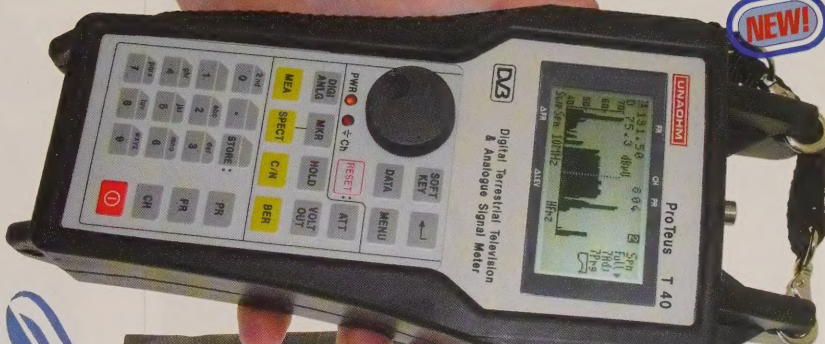
T40 DVB-Terrestrial COFDM *now true BER!*
S20C DVB- Satellite QPSK **FOXTEL** APP. F10486
C30 DVB- Cable QAM *true BER!*

TechTip. real screen examples enhanced for print legibility.

RB25T A smaller, lighter Unaohm TV meter that includes real time and Expanded Spectrum. The True BER card of your choice is factory fitted whilst estimated BER is included for the remainder. 5-65MHz Return Path can also be factory fitted. Similar to the EP300, with improved shoulder straps that leave your hands free to work.

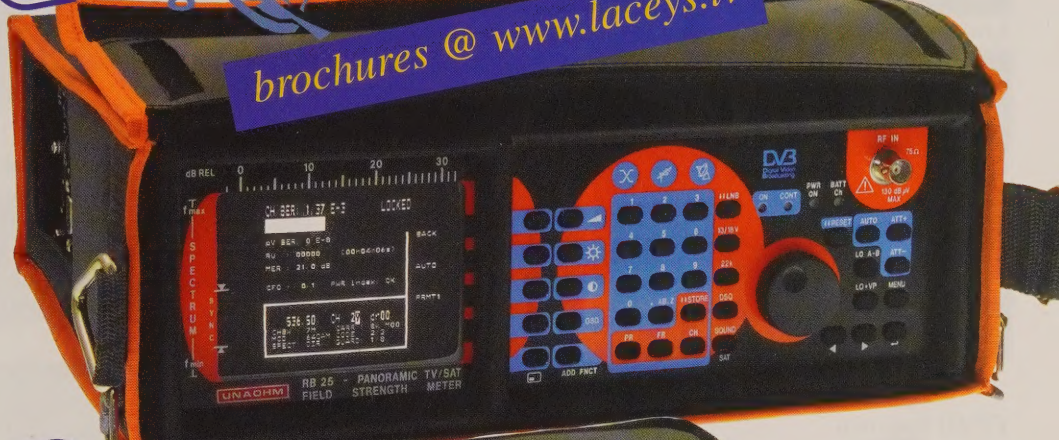
EP 300 A no compromise maintenance and troubleshooting tool for Analogue and Digital television system engineers and installers. Level and Spectrum measurements are highly accurate. Spectrum RBW of 100kHz and 1.5MHz provide detailed real time displays (see p.70). 5-65MHz sub-band Return Path measurements are included with a faster Data Logger that can log up to 100 programs per acquisition. Possible configurations include True BER for DVB-T COFDM, DVB-S QPSK, and DVB-C QAM.

EP 3000 All measurements necessary for the Analogue to Digital transition, with a colour TFT screen. *Integral DCP* measures the lumpiest multiplex precisely. Options include Bit Error Ratio for DVB-T, DVB-S and DVB-C; Network Identification Table display; Constellation display; Adaptive Equalizer Response echo values; GPS Transmitter and Satellite locator; MPEG II demodulator; Internal Noise Generator; Printer; 2,230 Mhz extended range; PAL-SECAM-NTSC; spare Ni-Mh Battery Pack and 75 Ω /50 Ω Input Impedance. One of the best TV field meters available, replaces the EP507.



NEW! LESS THAN 5kg

brochures @ www.laceys.tv



NEW!



FOXTEL
APP. FF10431

NEW!

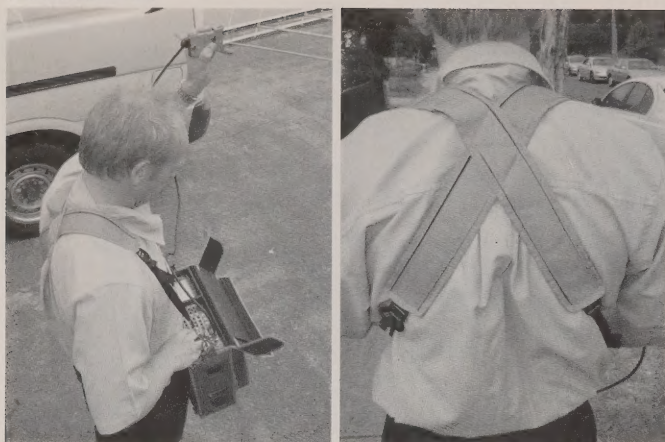
What options do you need?



FOXTEL
11dB MER
REQUIRED AT EACH OUTLET

LESS THAN 6.5kg
FULLY LOADED

UNAOHM

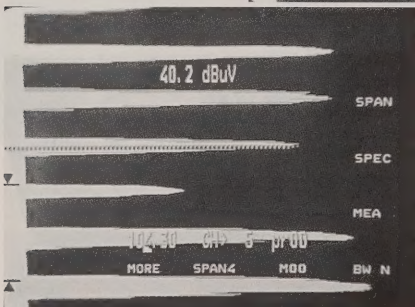
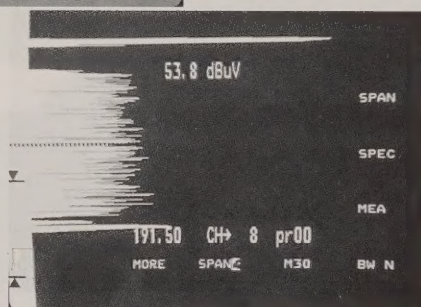


Low stress RB25 harness, you can even stand on your head!

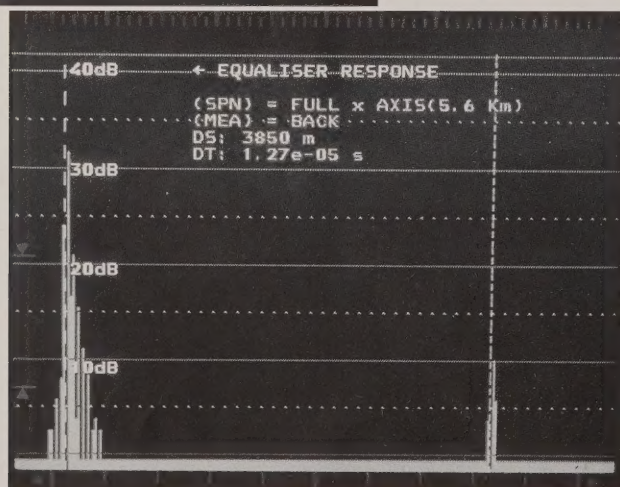


EP300 TV mode with Sync. Pulse Colour Burst display active. On Screen Display shows tuning and function options. Transparent OSD selectable.

EP300 Spectrum display tuned to the centre of Channel 8. Span4 narrow RBW is engaged with 30dB of Manual attenuation

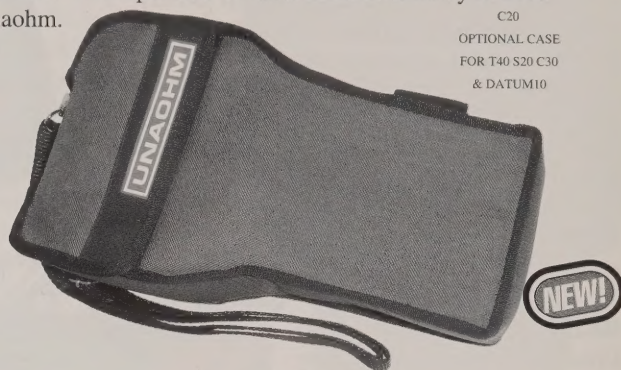


EP300 clearly resolves FM radio signals. Span4 Narrow RBW, marker over 104.3.



EP3000 colour Adaptive Equaliser Response function showing COFDM reflections over space and time. Extremely helpful minimizing signal reflections from Single Frequency Networks.

In 2004 Foxtel tested instruments extensively against Rohde & Schwarz references to find meters with measurement integrity. Surprisingly few instruments passed, but one that did is Unaohm. For repeatable reliable measurements you need Unaohm.



C20
OPTIONAL CASE
FOR T40 S20 C30
& DATUM10

BP6 New external battery pack for handheld instruments DaTuM 10, S20, C30 or T40. Convenient vertical clip and horizontal elastic belt fittings. Charge indicator, in/out connectors and accessory cable permit charging simultaneously with your instruments internal battery or individually. The instruments right side DC jack bypasses the internal battery making all of the BP6 6V 3800mAh capacity available to run your instrument.



UNA OHM

DL194 A high-performance data logger and field strength meter developed for general TV signal measurement and CATV applications, DL194 works up to 900 MHz for today's high bandwidth cable systems, and includes the sub-band down to 5 MHz. Tune by Frequency, Channel, or up to 100 user Preset programmes, giving the operator maximum flexibility.

In logging mode, the DL 194 will automatically acquire measurements to times or intervals programmed either by front panel key-pad or via RS 232 data port from PC or modem. Up to ten customized data acquisition plans can be programmed. Pass or Fail test is also provided. Abundant data storage capability lets you capture the results of critical measurements for later analysis; via a PC, an external printer, or the unit's own display. The acquired results can even be hard copied via the DL 194's standard internal printer.

Powered from an internal 12V/1.8 Ah lead-acid battery, the unit is delivered with a small outboard power-supply/battery-charger. The DL 194 is compact, weighs 2.8 kg, and comes with a nylon protection bag and shoulder-strap.



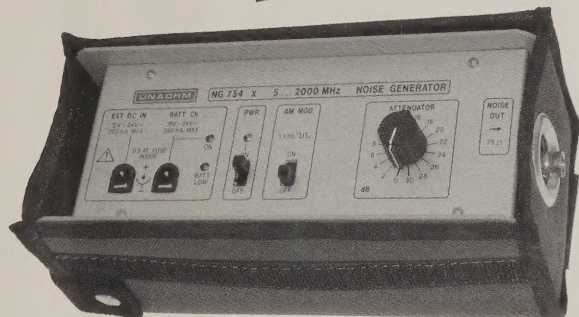
NG 500 *New*
5 to 2300MHz
Noise Generator
75Ω High Output.
Now you can sweep
anything from a
connector to an
entire TV system!
=80dBμV @ 1MHz
rbw ±2dB over
entire range.
Includes case,
mains power supply
and space for
optional battery
pack, 12 - 16VDC
@ 240mA.



NEW!

UNAOHM

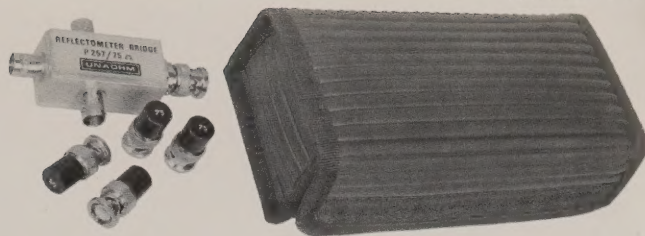
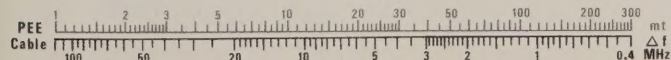
Ask for our NG
Application Notes!



NG754X Free standing 45-2,000MHz Noise Generator with integrated attenuator and selectable 1KHz AM Modulation. Useful for checking Frequency Response, Return Loss (with P257 75Ω bridge), filter alignment etc. Internal battery simplifies sweeping entire TV systems with 1KHz square wave modulation to help identify signal.. Frequency Range: 45-2,000MHz. Output Level: equal to 77 dBμV (-30dBm) on a 1MHz measurement bandwidth. Attenuator: 0-30dB in 2dB steps. Attenuator Accuracy: ±.5dB 45 to 1,000MHz ±1.5dB 1,000 to 2,000MHz. Selectable AM Mod.: 1KHz ± 5% square wave. Attenuator Precision: ±1dB @ 0dB. Stability: ± 2dB to ± 20°C. Output Impedance: 75Ω. Connector: BNC. Power: 12V DC 800mAh internal NiCad included, 18-24V DC via External supply / charger included Field Case :included.

UNAOHM

TechTip. measure distance to damage or interruption in coax cable with a Spectrum Analyser and Noise Generator. **METHOD:** Connect a T piece to the Analyser RF input.. Connect Noise Generator and cable under test to T piece. Measure the distance between spectrum 'bumps' in MHz. Check frequency against distance on the foam dielectric ruler below. Higher frequency = greater accuracy.



P257/75 Reflectometer Bridge 75Ω. Measures reflection co-efficient of almost anything with NG 500 or NG754X noise generators etc. and analyser or signal meter. Frequency Range: 45-2,000MHz Impedance: 75Ω, Directivity: 30dB, Included: 2 x 75Ω, 1 x 50Ω & 1 x 100Ω terminators, and soft case.

P134/75 RF detector instrument quality. Enables RF sweep traces to be displayed on an oscilloscope. 2GHz 75Ω. Particularly useful for bench filter design and alignment work at low cost.

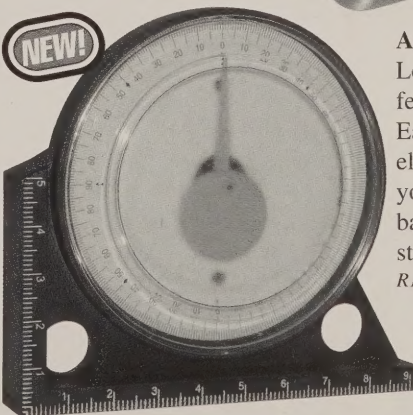
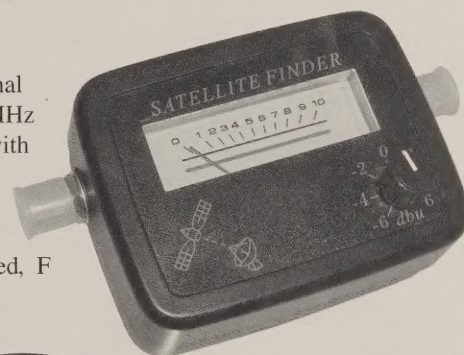


P121 Power Inserter with LED indicator, instrument quality. Powers mast amp from an instrument without this ability.



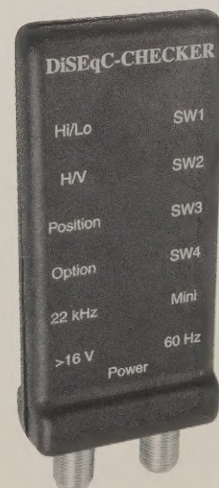
UNAOHM

SF97 Satellite signal finder. 950-2,150MHz Satellite IF meter with accoustic tone. Sensitivity control for different signal levels. Line powered, F connectors. R59.



AngleFinder
Locate your satellite by feed arm inclination. Each slot has a different elevation. Once known you can't miss! Magnetic base helps AngleFinder stay on your feed arm. R18.

DSQCHQ
Check DiSEqC status. 13 LED's enables tracking of elusive DiSEqC system faults. Connects in line between satellite receiver and DiSEqC switch (etc.) via F type female connectors. Powers from set top box or instrument. Batteries or other external supply not required. R79.





Laceys.tvTM

A division of
Peter C. Lacey Services Pty. Ltd. ABN 59769658785

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e-mail: info@laceys.tv

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16/19 Childs Rd. Chipping Norton	NSW 2170	Tel: (02) 9755 5026	Fax: (02) 9755 5027
4 / 161 Orlando St. Coffs Harbour	NSW 2450	Tel: (02) 6651 6100	Fax: (03) 6651 7022
Westside Centre, Queen St. Ulverstone	TAS 7315	Tel: (02) 6425 6235	Fax: (02) 6425 5319

Catalogue No. 104

ABC choose FR



When the ABC needed to monitor regional TV transmitters up to 200Km away, they bought Fracarro antennas and single channel mast amplifiers.

World renowned instrument manufacturer Rohde & Schwarz include an Unaohm TV instrument as part of their complete radio frequency monitoring set for Government authorities.

